No. 336.

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TRANSCRIPT OF RECORD.

SUPREME COURT OF THE UNITED STATES.

No. ~~336.~~ 67

SIMON WING, ALBERT S. SOUTHWORTH, AND MARCUS ORMSBEE, APPELLANTS,

VS.

EDWARD ANTHONY, HENRY T. ANTHONY, AND VINCENT M. WILCOX.

APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF NEW YORK.

FILED OCTOBER 14, 1879.

SUPREME COURT OF THE UNITED STATES.

No. 336.

SIMON WING, ALBERT S. SOUTHWORTH, AND MARCUS ORMSBEE, APPELLANTS,

VS.

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APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF NEW YORK.

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1 The President of the United States of America to Edward and Henry T. Anthony and Vincent M. Wilcox, greeting:

You are hereby commanded that you and each of you personally appear before the judges of the circuit court of the United States of America for the southern district of New York, in the second circuit, court in equity, on the first Monday of August, A. D. 1873, wherever the said court shall then be, to answer a bill of complaint exhibited against you in the said court by Simon Wing, Albert S. Southworth, and Marcus Ormsbee, and do further and receive what the said court shall have considered in that behalf. And this you are not to omit under the penalty on you of two hundred and fifty dollars.

Witness Hon. Nathan Clifford, associate justice of the Supreme Court of the United States, at the city of New York, on the 16th day of June, in the year one thousand eight hundred and seventy-three, and of the Independence of the United States of America the ninety-seventh.

[L. S.] KENNETH G. WHITE, *Clerk.*

ABBOTT BROTHERS,
Compl'ts Sol'rs, 71 *Broadway, N. Y. City.*

The defendants are required to enter appearance in the above cause in the clerk's office of this court on or before the first Monday of August, 1873, or the bill will be taken pro confesso against them.

K. G. W., *Clerk.*

2 I hereby certify that on the 20th day of June, 1873, at the city of New York, in my district, I personally served the within subp. eq. upon the within-named Vincent M. Wilcox, by exhibiting to him the within original and at the same time leaving with him a copy thereof.

Dated June 24, 1873.

OLIVER FISKE,
U. S. Marshal S. D. N. Y.

F. B.

I hereby certify that on the 24th day of June, 1873, at the city of New York, in my district, I personally served the within subp. eq. upon the within-named Edward Anthony & Henry T. Anthony, by exhibiting to each of them the within original, and at the same time leaving with each of them a copy thereof.

Dated June 24, 1873.

OLVER FISKE,
U. S. Marshal, S. D. N. Y.

F. B.

Filed June 27, 1873. 141.
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3 Circuit court of the United States, southern district of New York. In equity.

Bill of complaint.—Filed June, 1873.

SIMON WING, A. S. SOUTHWORTH, AND MARCUS Ormsbee
vs.
EDWARD AND HENRY T. ANTHONY AND V. M. Wilcox, partners in business under the firm name of E. & H. T. Anthony, & Co.

To the honorable the justices of the circuit court of the United Stat for the southern district of New York:

Simon Wing and Albert S. Southworth, both of Boston, in the State of Massachusetts, and citizens of the State of Massachusetts, and Marcus Ormsbee, of Brooklyn, in the State of New York, and a citizen of the State of New York, bring this their bill of complaint against Edward and Henry T. Anthony and Vincent M. Wilcox, of New Y in the State of New York, citizens of said State of Ne partners in business under the firm name of E. & H

And thereupon your orators complain and say:

That before the 10th of April, 1855, the said Al S. Southworth, being the original and first inventor of a new and useful improvement in plate-holders for cameras, which was never known or used before his invention thereof, and which was not at the time in public use or on sale with his consent and allowance, made application according to law for letters patent of the United States to be 4 granted him therefor, upon which application, due proceedings being had in all respects, said letters patent were on said 10th day of April, 1855, granted, issued, and delivered to the said Southworth, signed by the Secretary of the Interior and countersigned by the Commissioner of Patents, and under the seal of the Patent Office, whereby there was secured to the said Southworth, his heirs, administrators, or assigns, the full and exclusive right and liberty of making, using, and vending to others the said improvement.

That afterwards, on the 30th day of April, 1860, the said Southworth, by his deed of that date duly executed and recorded, assigned all his right, title, and interest in said letters patent to the said Simon Wing and the said Marcus Ormsbee, with the exception of the right to make, sell, and use the said invention in the city of Salem, in said Massachusetts, whereby the said Wing and Ormsbee became possessed of the exclusive right to make, use, and vend to others to be used the invention therein specified and claimed, with the exception aforesaid as by a certified copy of said deed here in court to be produced will more fully appear.

That afterwards the said Southworth, at the request of said Wing and Ormsbee, and for the benefit of himself and all persons to whom he had previously assigned any interest in said letters patent, surrendered said letters patent on account of their being inoperative and invalid by reason of a defective or insufficient description and specification, and that the error arose by inadvertency, accident, or mistake, and without any fraudulent or deceptive intention; and that thereupon such proceedings were duly had; that on the 25th day of September, 1860, the Commissioner of Patents at the request of the said Southworth, Wing, and Ormsbee, granted, issued, and delivered to the said Southworth new letters patent for the same invention, signed by the Secretary of the Interior, and countersigned by the Commissioner of Patents, and under the seal of the Patent Office, whereby there was secured to the said Southworth, his heirs, administrators, or assigns, for the term of fourteen years from the said 10th day of April, 5 1855, the full and exclusive right and liberty of making, using, and vending to others to be used, the said invention specified claimed in the amended specification thereto annexed, as by said sued letters patent here in court to be produced will fully appear.

That the said Southworth, on the 8th day of December, 1860, by his ed of that date duly executed and recorded, assigned to said Wing nd Ormsbee all his right, title, and interest in said reissued letters patent, and confirmed to them their title thereto, as by said deed here in court to be produced will fully appear.

That the said Ormsbee, on the 6th day of February, 1861, by his deed of that date duly executed and recorded, assigned to the said Wing all his right, title, and interest in said reissued letters patent for, o, and in the United States, except the city of New York and the es of Rhode Island, Massachusetts, Pennsylvania, Illinois, Dela- land, Virginia, North Carolina, South Carolina, and Georgia, re in court to be produced will fully appear.

The defendant

That ing, on the said 6th day of February, 1861, by his deed of that duly executed and recorded, assigned to the said Ormsbee all his right, title, and interest in said reissued letters patent for, to, and in the places excepted in said last-mentioned assignment as by said deed here in court to be produced will fully appear.

And your orators further show that after the territorial assignment of said reissued patent last mentioned until shortly before the expiration of the term for which said reissued patent was granted, your orators, the said Wing and Ormsbee, and those claiming under them, were possessed of the sole and exclusive right to make, use, and vend to others to be used, the said new and useful improvement in plate-holders for cameras, and that they never acquiesced in any infringement of their said right, and that they expended large sums of money in manufacturing cameras embracing the said invention, and making the same profitable to themselves and the public, and that the said invention was and is of great value and advantage; and that a large number of cameras embracing said invention were sold by them, and that 6 the public to a great extent and almost universally acknowledged and acquiesced in the said exclusive rights of the said Wing and the said Ormsbee, and those claiming under them; and that the said Wing and the said Ormsbee sold a large number of territorial and shop rights to practise said invention, the assignees acknowledging and acquiescing in their claim to the exclusive right aforesaid; but that the exclusive ownership of the said invention was always in your orators, either jointly or separately.

And your orators further show that the validity of the said reissued patent was fully established by the judgment and decree of the circuit court of the United States for the district of Massachusetts, at the May term of the court, 1856, in a suit in equity founded on said reissued patent, then duly pending before the court, wherein the said Simon Wing was plaintiff and Charles F. Richardson was defendant, after a full hearing by the court of the arguments of the counsel of the respective parties upon the pleadings and proofs taken at great length and after due consideration thereof, when it was adjudged and decreed that the said reissued patent was valid and that the defendant Richardson had infringed the same, as by the records of said court or a duly authenticated copy thereof, here in court to be produced, will fully appear.

That, after the said decree of said court in the said suit of Wing vs. Richardson, more than two hundred infringers of said reissued patent submitted to the claims of the said Wing and said Ormsbee to the exclusive right secured by said reissued patent, and paid to the said Wing or to the said Ormsbee large sums for the damages sustained by said infringements.

And your orators further show that after the said Wing acquired his interest in said reissued patent, as aforesaid, in and for the State of Maine, said reissued patent was infringed in Biddeford, in the State of Maine, by Enoch H. McKenney, whereupon said Wing, on the 5th day of April, 1861, commenced an action at law against said McKenney in the circuit court of the United States for the district of Maine, and duly entered the same at the term thereof held on the 23d day of April, 1861, and thereupon such proceedings were duly had that the said Wing recovered judgment against the said McKenney for damages,
7 as by the record in said court still remaining, or a duly authenticated copy thereof, here in court to be produced, will fully appear.

And that after said Wing acquired his interest as aforesaid for the State of Maine, he assigned to one Charles S. Sanderson the said reissued patent for, to, and in the city of Bath, in said State, and that thereafter the said reissued patent was infringed in said Bath by William B. Stearns; whereupon the said Sanderson commenced on the 23rd day of September, 1861, an action at law against said Stearns, and duly entered the same at the term thereof held on the 23d day of April, 1862, and thereupon such proceedings were had that the said Sanderson recovered judgment against the said Stearns for damages caused by said infringement of said reissued patent, as by the record in said court remaining, or a duly authenticated copy thereof, here in court to be produced, will fully appear.

And your orators further show that the validity of said reissued patent has been further established by the decree of the circuit court of the United States for the district of Rhode Island, in the June term of said court, 1867, in a suit in equity founded thereon, wherein Augustus E. Alden was plaintiff and the Gorham Manufacturing Company was defendant, when it was decreed by the said court that an injunction should issue against the defendant restraining him from the infringement of said reissued patent; and that the case was referred to a master to ascertain the profits wrongfully made by the defendant by said infringement, and that the said plaintiff eventually recovered a large sum as the profits so wrongfully made, as in and by the records of said court, or a duly authenticated copy thereof, here in court to be produced, will fully appear.

And that the validity of said reissued patent has been further established by the decree of the circuit court of the United States in and for the southern district of New York, at the October term, 1865, in twelve suits in equity, founded thereon, wherein the said Ormsbee was plaintiff and George C. Rockwood and various others were defendants, after a full hearing of the pleadings and proofs and arguments of counsel for the respective parties, when it was decreed by the said court that an injunction should issue against the defendants respectively,
8 restraining them from further infringement of said reissued pat-

ent, as by a certified copy of the records of said court here in court to be produced will fully appear.

And that the validity of the said reissued patent has been further and fully established by the decree of the circuit court of the United States in and for the southern district of New York, at the October term, 1867, in a suit in equity founded thereon, wherein said Marcus Ormsbee was plaintiff and John Wood was defendant, after a full and final hearing of the pleadings and proofs and arguments of counsel for the respective parties, when it was ordered, adjudged, and decreed that the reissued patent is a good and valid patent, and that the said Albert S. Southworth was the original and first inventor of the invention described and claimed in said patent, and was further ordered, adjudged, and decreed that a perpetual injunction be issued against the said defendant, commanding and enjoining him from making, using, or vending to others to be used, directly or indirectly, any photographic camera that moves the plate over the focus of the lens, or the lens over the surface of the plate, or that brings the different portions of a single plate or several smaller plates successively into the field of the lens of the camera, as in and by the records of said court, or a duly authenticated copy thereof, here in court to be produced, will fully appear.

And your orators further show that on or about the 14th day of August, 1866, your orator, the said Wing, being then the owner of the said reissued patent for the city of Troy, in the State of New York, filed a bill of complaint founded on said reissued patent, in the circuit court of the United States for the northern district of New York, against Christopher C. Schoonmaker, for infringement of said reissued patent at said Troy; whereupon such proceedings were had, that in July, 1869, it was decided by the court that the said Southworth was not the first inventor of the improvement patented in said reissued patent, and a decree was entered for the defendant; that thereupon the said Wing appealed to the Supreme Court of the United States, and that the suit was duly carried to the said Supreme Court, and there, at the December term, 1870, the appeal was argued before eight justices, and that the said Supreme Court was equally divided in opinion
9 and refused to decide upon the validity of said reissued patent, thereby allowing the decree of the court below to stand, as by the record of the Supreme Court, or by a certified copy thereof, in court to be produced, will fully appear.

And your orators further show that the decision in said suit of Wing vs. Schoonmaker, in the circuit court of the United States for the northern district of New York, is, of the many suits which have been brought upon said reissued patent, the only suit in which the validity of the patent has not been upheld by the court.

Your orators further show that in said suit the defendant in his answer alleged that the invention was known and used by sundry persons prior to the date of said Southworth's invention, and that in support of such allegation he offered evidence to show that various persons, prior to the date of said Southworth's original patent, had, to some extent, used instruments which the defendant claimed substantially embodied Southworth's invention. And your orators allege that in the said suit of Wing vs. Richardson, in the circuit court of the United States for the district of Massachusetts, the defendant was held by the court to infringe the said reissued patent by the use of an instrument in which the lens was moved into different positions over the surface of the plate. And they further allege that in the said suit against Schoonmaker, in the northern district of New York, one of the defendants

principal witnesses testified that an instrument in which the lens was moved over the surface of the plate produced substantially the same results and embraced the same invention as an instrument in which the plate was moved before the field of the lens, and that no evidence was offered in said suit tending to show that there was any substantial difference between the two constructions of the instrument, or modes of operation. And that the plaintiff in that suit, relying upon this admission of the defendant's witness, made in an early stage of the case, and upon the neglect of the defendant to attempt to show any substantial difference between the two forms of instrument, as well as upon the decision in Wing vs. Richardson, and upon repeated decisions in the circuit court of the United States for the southern district of New York, believed that no question would be raised as to the invention being embodied in one form of the instrument as well as in the
10 other, and therefore offered evidence of the time when Southworth made the invention and reduced it to practice in that form in which the lens is moved over the surface of the plate; and your orators allege that the time of his first using the invention in the form described in the patent was not shown in said suit except incidentally, and that the plaintiff did not offer such full evidence, as he otherwise might have done, of the substantial identity of the two forms of the instrument. Nevertheless your orators are informed and believe that the court in said suit did come to the conclusion that the two forms of the instrument were substantially different, and that the plaintiff did not prove that Southworth reduced the invention to practice in the form described in the patent before the time when other parties had used the invention in that form. And your orators allege that they are now able to offer much more full and conclusive evidence of the substantial identity of the two forms of said instrument, and that each embodies the invention of the said Southworth, and thus to show that Southworth did in fact reduce the patented invention to practice at a time long anterior to the date at which the defendant showed the use of the invention by other parties. And they further allege that even if the patent is construed to embrace only an instrument in which the plate is moved over the focus of the lens, your orators have evidence to show that Southworth reduced his invention to practice in that form at a much earlier date than appeared in the case of Wing vs. Schoonmaker, and prior to the use of said invention in that form by any other person.

And your orators further show that before the fourth day of December, 1860, the said Simon Wing being the original and first inventor of a new and useful photographic camera, which was not known or used before his invention thereof, and which was not at the time in public use or on sale with his consent and allowance, made application according to law for letters patent of the United States to be granted him therefor, upon which application due proceedings being had in all respects, said letters patent were, on the said fourth day of December, 1860, granted, issued, and delivered to the said Wing, signed by the Secretary of the Interior and countersigned by the Commissioner of Patents, and under the seal of the Patent Office, by which said
11 letters patent there was granted to the said Wing, his heirs, administrators, or assigns, the full and exclusive right and liberty of making, using, and vending to others to be used, the said invention therein specified and claimed, as in and by said letters patent, here in court to be produced, will fully appear.

That the said Wing, on the eighth day of December, 1860, by his deed of that date, duly executed and recorded, assigned to the said Ormsbee one undivided half of said letters patent dated December 4, 1860, as by said deed here in court to be produced will fully appear. And that afterwards the said Wing and the said Ormsbee, by their joint deed dated August 2, 1869, duly executed and recorded, assigned to the said Southworth one undivided third part of said patent dated December 4, 1860, whereby your orators became each the owner of one undivided third part of the said patent dated December 4, 1860, and the invention secured thereby. And your orators say that the said invention is of great value and advantage; and that since the grant of said letters patent dated December 4, 1860, the owners thereof for the time being have never acquiesced in any infringement thereof, and have always had the invention secured thereby in public use, and have sold great numbers of cameras embracing said invention, and that the public has to a great degree acquiesced in the claim set up by said owners to the exclusive right aforesaid secured by said patent.

And your orators further show that on the seventh day of February, 1868, the said Wing by his deed of that date, duly executed and recorded, assigned to the said Southworth all the right, title, and interest which he had or might have in any extension of said reissued patent, as in and by said deed, here in court to be produced, will fully appear. And that on the said seventh day of February, 1868, the said Ormsbee by his deed of that date, duly executed and recorded, assigned to the said Southworth all the right, title, and interest which the said Ormsbee had or might have in any extension of said reissued patent, as in and by said deed, here in court to be produced, will fully appear.

And your orators further show that shortly before the expiration of the term for which said reissued patent was granted, your orator,
12 the said Southworth, the original patentee, made application in due form of law to the Commissioner of Patents for an extension thereof, whereupon such proceedings were duly had that the said Commissioner did, according to law, renew and extend the said reissued patent, by making a certificate of said extension thereon, for the term of seven years from and after the expiration of the term of fourteen years for which said patent reissued as aforesaid was granted; as by said certificate here in court to be produced will fully appear.

That on the twentieth day of April, 1869, your orator, the said Southworth, by his several deeds of that date, duly executed and recorded, assigned to your orators, the said Wing and the said Ormsbee, each, one undivided third part of said reissued patent and the extension and renewal thereof, for, to, and in the entire territory of the United States, to the full end of said extended term, as in and by said deeds in court to be produced will fully appear.

That by virtue of the extension of said reissued patent, and the last-mentioned assignment, your orators became possessed of and entitled to the said extended patent and all the exclusive rights and privileges secured thereby.

And your orators further show that since they became possessed of and entitled to the said extended patent they have sold a few shop rights and a few small territorial rights under said patent; but that with these exceptions they have retained all the exclusive rights, privileges, and interests secured by said patent for the greater part of the United States, including said New York, and that they have made arrangements for the manufacture and sale of cameras embracing the inventions secured in said patent for the purpose of supplying the market therewith, and that they had hoped to do a profitable business in such manufacture and sale, and that were it not for the wrongful acts of the defendants and others who have combined and confederated with them to injure your orators, your orators would have made large gains and profits from said manufacture and sale; and that your orators have never acquiesced in any infringement of their exclusive rights under the said patent.

Yet the defendants, well knowing the premises and the exclusive rights secured to your orators as aforesaid, but contriving to in-
13 jure your orators and to deprive them of the benefits and advantages which might, and otherwise would, accrue to them from said inventions, as your orators are informed and believe, without the license or consent of your orators, and in infringement of the said reissued patent extended as aforesaid, within the territory retained by your orators as aforesaid, and more especially at said New York, have hitherto, both before and since the extension of said reissued patent, unlawfully and wrongfully made, vended, or used, and are now making, vending, or using cameras, and plate-holders for cameras, embracing in their construction and mode of operation the inventions described and claimed in said patents, the exclusive right to make, use, and vend which is by law vested in your orators; but precisely how many of said cameras, and plate-holders for cameras, the said defendants have made, or how long they have continued to make or use or sell them, or to what extent they have used them, your orators for want of a discovery thereof do not know and cannot set forth, and they pray that the defendants may be made to set forth the same in their answer.

And your orators have requested the said defendants to acknowledge their rights in the premises, and to desist and refrain from unlawfully disregarding and infringing the same, and to account with and pay over to your orators all profits which the defendants have derived from said wrongful use of said inventions, or either of them, and all damages sustained by your orators by reason of said infringements.

But now so it is, may it please your honors, that the said defendants have wholly refused so to do, but they threaten to continue their said infringement of the rights of your orators aforesaid, and have combined and confederated with other persons, to your orators unknown, to resist and destroy the exclusive rights and privileges secured to your orators as aforesaid, and to make and use the said inventions without the license of your orators, and in violation of their just rights in the premises.

All of which is contrary to equity and good conscience.

To the end, therefore, that the said defendants may, if they can, show why your orators should not have the relief hereby prayed, and
14 may upon their oath, and according to their best and utmost knowledge, remembrance, information, or belief, full, true, direct, and perfect answer make to all and singular the matters hereinbefore stated and charged, as fully and particularly as if the same were here repeated and they especially interrogated as to each and every of said matters, and more especially may answer, discover and set forth whether during any and what period of time, and whether at said New York or elsewhere, and where, they have made or used or vended any camera, or plate-holder for cameras, and whether the same embraced the said inventions or either of them, patented as aforesaid, or how the same differed from said patented inventions; and that the defendants may be decreed to account for and pay over to your orators all gains and profits realized from said infringements, and all damages sustained by your orators thereby; and may be restrained, together with their servants and agents, by an injunction to be issued out of this honorable

court, or by one of your honors, according to law in such case provided, from making, using, or vending cameras or plate-holders for cameras embracing said inventions, or either of them, or a substantial part thereof; and for such other and further relief in the premises as the nature of the case may require, or to your honors may seem meet.

May it please your honors to grant to your orators a writ of subpœna issuing out of and under the seal of this honorable court, directed to the said defendants, commanding them to appear and make answer to this bill of complaint, and to perform and abide by such order and decree herein as to this court may seem meet; and may it please your honors to grant to your orators a writ of injunction conformable to the prayer of this bill, and also a provisional or preliminary injunction issuing out of and under the seal of this honorable court, enjoining and restraining the defendants, to the same purport, tenor, and effect as hereinbefore prayed for in regard to said perpetual injunction. And your orators will ever pray.

SIMON WING.
ALBERT S. SOUTHWORTH.
MARCUS ORMSBEE.

ABBOTT BROTHERS,
Solicitors and of Counsel for Plaintiffs,
71 Broadway, New York City.

15 UNITED STATES OF AMERICA,
Southern District of New York, ss:

I, Albert A. Abbott, a notary public within and for the city and county of New York, do hereby certify that on this first day of March, 1873, came the said Simon Wing and the said Albert S. Southworth, and Marcus Ormsbee, and each severally made oath that he had read the foregoing bill of complaint by him subscribed, and understands its contents, and that the same are true of his own knowledge except as to matters stated on information and belief, and as to those matters he believes the same to be true.

Before me,
[SEAL.]
ALBERT A. ABBOTT,
Notary Public, New York City and County.

Answer.—Filed September 20, 1873.

The answer of E. & H. T. Anthony & Vincent M. Wilcox, defendants, to the bill of complaint of Simon Wing, Albert S. Southworth, and Marcus Ormsbee, complainants.

These defendants, now and at all times hereafter saving and reserving unto themselves all and all manner of benefit and advantage of exception that can be had or taken to the many errors, imperfections, and insufficiencies in the said bill of complaint contained, for answer thereto, or to so much and to such portions thereof as they are advised it is material or necessary for them to make answer unto, answering, say that, so far as they have any knowledge or information, they do not believe, and, therefore, deny, that one Albert S. Southworth, mentioned in said bill of complaint, ever invented any new and useful improvement in plate-holders for cameras, as in said bill of complaint is alleged, or that he was ever the first and original inventor of any such improvement, or that the invention claimed in said bill of complaint is new or useful.

16 And these defendants, further answering, say they are informed and believe, and, therefore, admit, that letters patent for said alleged invention were granted to Albert S. Southworth on the 10th day of April, 1855, and that the same were surrendered and a reissue granted on the 25th day of September, 1860, as in said bill is alleged, and upon information and belief these defendants admit the assignment by said Southworth to Simon Wing and Marcus Ormsbee, as alleged in the bill herein.

And these defendants, further answering on information and belief, deny that said original letters patent were surrendered and a reissue sought on account of their being inoperative and invalid by reason of a defective or insufficient description and specification of said alleged improvement and invention, or that there were any such errors which arose from inadvertence, accident, or mistake; and they allege, on information and belief, that the said reissue was obtained for the purpose of covering or appearing to cover more than was covered by or included in said original letters patent, and what the said patentee had no right to, and to embarrass manufacturers and photographers, and with the intent thereby to deter the public from using what they have a right to use.

These defendants, further answering, say that the said reissued letters patent are not for the same invention as the original letters patent, and that by reason thereof the said reissued letters patent are null and void.

These defendants, further answering, say that the claim of said reissued letters patent is for more than is covered by said original letters patent, and is not such an one as the said patentee is legally entitled to, and that by reason thereof the said letters patent so reissued are null and void; and the defendant claims the same benefit from this objection as though the same had been duly taken on demurrer.

These defendants, further answering, allege that the said reissued letters patent cover inventions and things not made by said Southworth or known to said Southworth, and more than he described or claimed as his invention, and things invented by others, and the said reissue is thereby rendered equivocal, and is null and void, and
17 that the same was fraudulently obtained, and he prays for the production of the said original and reissued letters patent.

And these defendants, further answering on information and belief, admit that an extension of said reissued letters patent has been granted for seven years from the date of the expiration of the term for which said letters patent were originally granted, as in the said bill of complaint set forth.

These defendants, further answering, say that whether the said several assignments alleged in said bill of complaint were made or not, and whether the complainants are the owners of any interest in and to the said alleged invention they have no knowledge nor information other than is contained in the bill of complaint in this cause, and they pray that, if material, the complainants may be required to make due proof of the same, as alleged in their said bill.

These defendants, further answering on information and belief, admit the several trials and adjudications in relation to the said reissued letters patent as set forth in the bill of complaint, but allege that all said adjudications, except in the case of Wing vs. Schoonmaker, were occasioned by reason of insufficient development of evidence on the part of the defendants in the said several actions.

And these defendants admit that an action was commenced by the said complainant Wing against Christopher C. Shoonmaker in the circuit court of the United States for the northern district of New York for infringement of said reissued patent, as is in the bill of complaint herein alleged, and he further admits that in said action, to wit, in July, 1869, it was decided by the court that the said Southworth was not the original inventor of the improvement patented as aforesaid, and that a decree was entered for the defendant on the ground that the said patent was invalid; and he further admits that the said suit was carried by appeal to the Supreme Court of the United States; and he alleges that, by decree duly made in said cause, the Supreme Court has affirmed the aforesaid decree of the circuit court aforesaid, as by the records of said circuit and Supreme courts, or by certified copies thereof, in court to be produced, will fully appear.

And defendants, further answering, say that the patent men-
18 tioned and described in the bill of complaint herein, and for an
alleged infringement of which this action is brought, is the identical patent which was in question in the aforesaid action of Wing vs. Schoonmaker, and which was therein adjudged to be invalid and void, and these defendants further aver and charge the fact to be that said letters patent are void by reason of there being no utility in the invention patented and secured thereon.

And these defendants, further answering, say that at and before the time of the application of the said Albert S. Southworth for letters patent of the United States, as in said bill of complaint alleged, various kinds and descriptions of cameras and processes for multiplying pictures had been invented and were publicly known, used, published, and described, filed and exhibited of record, and constituted a certain state of the art which was then and has since continued to be public property, free and common to be used by this defendant and all other persons; that numerous cameras and processes so publicly described or known and used anterior to the date of said patent embraced substantially the cameras and processes mentioned in the specification of said Albert S. Southworth, and also of what is attempted to be patented and secured by said letters patent, and that for that reason the said patent is invalid and void.

And defendants, further answering, say that, on information and belief, they deny that the said Southworth reduced his alleged invention to practice at an earlier date than appeared in the case of Wing vs. Schoonmaker, or prior to the use thereof by other persons; and they say that if the said Southworth did in fact reduce his said alleged invention to practice at an earlier date than appeared in said case of Wing vs. Schoonmaker, which this defendant does not admit, but on information and belief expressly denies, that then the said Southworth abandoned the same to the public, and the same was publicly known and used without dissent, prohibition, or hindrance from or by the said Southworth for a long time, to wit, for more than two years prior to the date of his said original letters patent, and that the same thereby became public and common property, free to be used by all persons
who might desire to make use of the same.

19 And defendants say that, long prior to the said supposed in-
vention of said Southworth, the invention of a sliding plate-holder for the purpose of multiplying pictures by moving the plate across the focus of the lens, and the principle of moving the focus of the lens over the surface of the plate for said purpose of multiplying pictures, was well known and in public and successful use; that before the alleged invention by said Southworth it was known and used

at Albany, New York, by Samuel J. Thompson, of Albany, New York, and by Seth E. Parsons and Eugene S. M. Haines, of Albany, New York; and at Troy, New York, by Arthur Cobden, Christopher C. Schoonmaker and William O. Smith, of Troy, New York; and at New York City by Alexander Beckers, of New York City; at Pittsfield, Mass., by Rodney H. Dewey, of Pittsfield, Mass.; at Geneva, New York, by James B. Sinsabaugh, now of Troy, New York; by Charles Thayer, of Braintree, Mass.; by Frederick Seibert, of Memphis, Tenn.; by H. A. Balch, now of Memphis, Tenn., at Joliet, Illinois; by Alex. Hessler, now of Evanston, Illinois, at Galena, Illinois; by George McKown, of Kingston, New York; by Henry J. and Wm. H. Lewis, of Greenpoint, New York; and at Buffalo, New York, by Joseph H. Tompkins, now of Grand Rapids, Michigan; also, at New York, by Victor Piad, now of Oceanport, New Jersey; by August Semmendinger, now of Fort Lee, New York, and by George W. Pine, of California; and by Jex. J. Bardwell, of Detroit, Mich.; by William M. Lockwood, of Ripon, Wisconsin; by T. W. Whitehurst, at Richmond, Virginia; by W. T. Bates and M. P. Simons, at Philadelphia, Penn.; by Phillip Hass, at New York City; I. B. Webster and J. C. Elrod, of Louisville, Kentucky; by Enos B. Foster, at New York, in 1844; by E. Z. Webster, of Norwich, Conn.; at Poughkeepsie, N. Y., in 1848, by Salas Selecnow, of San Francisco, California; at New York in 1845 by H. D. Francnow, of Columbusville, Long Island; at London, England, in in 1848; by Wm. A. Pratt, of Manton, Va., at Richmond, Va., in 1847.

These defendants, further answering, say that, as they are informed and believe, long prior to the said supposed invention and the application of the said Southworth for letters patent of the United
20, 21, 22, States therefor, as before mentioned, the invention of a
sliding plate-holder for the purpose of multiplying pictures by moving the plate across the focus of the lens, or the principle of moving the focus of the lens over the surface of the plate for the aforesaid purpose, was well known and in public and successful use in England, and other parts of Europe; and that the first named movement is fully and accurately described in a book published in England by one Hogg, in the year 1853, on page 75; and further, that the said first-named movement or plan of multiplying pictures was described in the journal of the Photographic Society of London, and published in the month of May, dated May 21st of the year 1853, and republished in the United States in the Photographic Art Journal, published in New York by W. Smith, in the September number of the said year 1853, on pages 142, 143, 144, and 145; and in Humphrey's Journal published at New York City, in the month of May, 1853, in the numbers of said journal dated May 1st and 15th, 1853.

And that the invention of bringing different portions of the same plate successively into the focus of the lens of the camera, for the purpose of multiplying pictures, substantially as is described in the letters patent mentioned in the bill of complaint, is described in letters patent of the United States numbered 6357, granted to Isaac Van Benschoten, John J. Woodbridge, and William E. Mann, and dated April 17th, A. D. 1849, and also in the United States letters patent granted W. H. and H. J. Lewis, November 11th, 1854.

And these defendants, further answering, say that they have not made, sold, nor used, and are not now making, selling, nor using any cameras or processes, or parts thereof, which are described or referred to in the said reissued letters patent, except such parts and things as were well known and public property long prior to the time of the said supposed invention of said Southworth.

And these defendants, further answering, deny that they have ever infringed or intended to infringe any rights of said complainant, and they believe they have a perfect right to use cameras and make pictures thereby as they have been doing.

23 And these defendants, further answering, say that as to the United States letters patent granted to Simon Wing on the 4th day of December, 1860, they wholly and entirely deny any and all infringement thereof, either within the southern district of New York or elsewhere.

And these defendants pray the benefit of as much of their answer as goes in bar of said bill, the same as if such matter had been pleaded thereto, and they humbly submit and insist that the premises considered the complainants have no right or title to the relief prayed for in the bill of complaint herein, and humbly pray to be hence dismissed with their reasonable costs and charges in this behalf most wrongfully sustained.

HENRY T. ANTHONY.

KELLER & BLAKE,
Of Counsel and Solicitors for Defendants.

UNITED STATES OF AMERICA,
Southern District of New York, ss:

Henry T. Anthony, being sworn, says that he is one of the defendants named in the foregoing answer, that he has read the same and knows the contents thereof, and that the same is true of his own knowledge except such matters as are therein stated on information and belief, and as to such matters he verily believes it to be true.

HENRY T. ANTHONY.

Subscribed and sworn to before me this 18th day of September, 1873.

[L. S.] PHILLIP ABBOTT,
Notary Public, City and County of New York.

24 *Replication.—Filed Sept. 30, 1873.*

The replication of Simon Wing, Albert S. Southworth, and Marcus Ormsbee, complainants, to the answer of Edward and Henry T. Anthony and Vincent M. Wilcox, partners in business, under the firm name of E. & H. T. Anthony & Co., defendants.

These repliants, saving and reserving unto themselves, now and at all times hereafter, all and all manner of benefit and advantage of exception which may be had or taken to the manifold insufficiencies of the said answer, for replication thereunto say that they will aver, maintain, and prove their said bill of complaint to be true, certain, and sufficient in law to be answered unto, and that the said answer of defendants is uncertain, untrue, and insufficient to be replied unto by these repliants; without this, that any other matter or thing whatsoever in the said answer contained, material or effectual in the law to be replied unto, and not herein and hereby well and sufficiently replied unto, confessed or avoided, traversed or denied, is true; all which matters and things these repliants are and will be ready to aver, maintain, and prove as this honorable court shall direct, and humbly pray as in and by their said bill they have already prayed.

ABBOTT BROTHERS,
Complainants' Solicitors.

25 Circuit court of the United States, for the southern district of New York. In equity.

SIMON WING ET AL.
vs.
EDWARD ANTHONY ET ALS.

On this 5th day of November, 1873, before me, an examiner appointed by this court by an order duly entered, appeared John S. Abbott on behalf of complainants, and Charles F. Blake, of Keller & Blake, on behalf of the respondents, at the office of said Keller & Blake, in New York City, in accordance with agreement of counsel for taking testimony.

Complainants introduced copy of record of patent No. 12700, marked Exhibit No. 1; also copy of record of patent and of certificate of extension No. 1049, marked Exhibit No. 2; also agreement signed by defendants' counsel, Messrs. Keller & Blake, and the exhibits therein referred to, being small multiplying camera-box, marked Exhibit No. 3, and larger camera-box, marked Exhibit No. 4, and the part of Anthony's Photographic Bulletin, marked Exhibit No. 5.

J. SPRAGUE MEEKER,
Special Examiner.

26 EXHIBIT NO. 1.

The U. S. Patent Office to all persons to whom these presents shall come, greeting:

This is to certify that the annexed is a true copy from the records of this office of the letters patent granted Albert S. Southworth, dated April 10, 1855, No. 12700, for plate-holder for cameras.

In testimony whereof, I, J. M. Thacher, acting Commissioner of Patents, have caused the seal of the Patent Office to be hereunto affixed this third day of November, in the year of our Lord one thousand eight hundred and seventy-three, and of the Independence of the United States the ninety-eighth.

[SEAL.] J. M. THACHER,
Acting Commissioner.

The United States of America to all to whom these letters patent shall come:

Whereas Albert S. Southworth, of Boston, Mass., has alleged that he has invented a new and useful plate-holder for cameras, which he states has not been known or used before his application; has made oath that he is a citizen of the United States, that he does verily believe that he is the original and first inventor or discoverer of the said plate-holder, and that the same hath not, to the best of his knowledge and belief, been previously known or used; has paid into the Treasury of the United States the sum of thirty dollars, and presented a petition to the Commissioner of Patents signifying a desire of obtaining an exclusive property in the said plate-holder, and praying that a patent may be granted for that purpose: These are therefore to grant, according to law, to the said Albert S. Southworth, his heirs, administrators, or assigns, for the term of fourteen years from the tenth day of April, one thousand eight hundred and fifty-five, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used, the said plate-holder, a description whereof is given in the

28 words of the said Southworth in the schedule hereunto annexed, and is made part of these presents.

In testimony whereof I have caused these letters to be made patent, and the seal of the Patent Office has been hereunto affixed.

Given under my hand at the city of Washington this tenth day of April, in the year of our Lord one thousand eight hundred and fifty-five, and of the Independence of the United States of America the seventy-ninth.

ROBERT McCLELLAND,
Secretary of the Interior.

Countersigned and sealed with the seal of the Patent Office.

L. S.]
S. T. SHUGERT,
Acting Commissioner of Patents.

(Here follows diagram marked page 27.)

The schedule referred to these in letters patent and making part of the same.

To all whom it may concern:

Be it known that I, A. S. Southworth, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful plate-holder for cameras, for taking photographic impressions, of which the following is a full, clear, and exact description, reference being had to the annexed drawings in which—

Fig. 1 is a front view.

Fig. 2, a rear view.

Fig. 3, a similar view, the cover being dropped into a horizontal position.

Fig. 4, a vertical section through the centre.

Fig. 5, an end view.

Fig. 6, details which will be referred to hereafter.

Fig. 7, the slider.

In taking daguerreotypes of small size for lockets it often occurs that the first picture taken is not properly timed or exposed to the light and a second or a third is required to be taken before a perfect picture is obtained. Each picture thus taken requires a freshly prepared plate, which causes a considerable consumption of time.

The object of my invention is to bring in rapid succession dif-
29 ferent parts of the same plate, or different plates of whatsoever material prepared for photographic purposes, into the centre of the field of the lens for the purpose of either timing them differently, that the most perfect may be selected, or of taking different view of the same object with the least delay possible, or of taking stereoscopic pictures upon the same or different plates with one camera.

My invention consists of a peculiarly arranged frame in which the plate-holder is permitted to slide, by which means I am enabled to take four daguerr'otypes upon one plate and at one sitting, different portions of the plate being brought successively opposite an opening in the frame, the opening remaining stationary in the axis of the camera while the plate-holder and plate are moved.

The frame which guides the motion of the plate-holder is constructed as follows: A is the front plate, immediately in the rear of which is a zinc plate B; in the centre of this plate is the hole C (seen in blue in Fig. 2), which is closed by the zinc slider D (Fig. 7), in the customary manner. Around the borders of this frame are the strips E, seen in section in Fig. 4, and in dotted lines in Fig. 1. The rear plate F of this plate is hinged to one of the strips E, at *b*; between this plate and the zin*k* plate B, and within the space enclosed by the strips E, slides the plate-holder which is constructed as follows:

G is the frame of the plate-holder, into the rectangular opening of which is inserted the daguerreotype plate seen in red in Fig. 2 and 4, and in dotted lines in Fig. 1. The back plate H rests against the daguerreotype plate and holds it in place. The plate-holder thus constructed is allowed to take four different poſitions within its carrying frame so as to bring the four different portions, 1, 2, 3, and 4, Fig. 2, of the plate successively opposite to the opening C. It is guided in its motions in the following manner: I is a block attached to the back plate of the plate-holder which projects through a rectangular opening, K, in the hinged plate F, the block I is moved in succession into the four corners of the opening K, by which means the four different portions of the daguerreotype plate are brought opposite to the opening C.

The motions of the block I are regulated by the guide L hinged
30 to the plate F, at *d*. When this block is in the position seen in
Fig. 2, the block I rests upon its top edge, and one corner of the daguerreotype plate (3) is opposite to the hole C. When the block I is slidden to the opposite corner of the opening K, still resting upon the piece I, another portion (4) of the daguerreotype plate is brought opposite the opening C. The guide-piece L is then thrown back, as seen in Fig. 4, and the block I is allowed to drop into the right-hand lower corner of the opening K, the block I as it descends being guided by the edge *a* and the portion (1) of the daguerreotype plate is brought opposite the opening C.

By another movement the block L is thrown into the left-hand corner of the opening K, the block I sliding in the channel *c* when the portion (2) of the daguerreotype plate is exposed to the opening C. I am thus enabled to take four impressions upon different portions of the same plate. These may be miniatures of the same person taken as before stated, for the purpose of selecting the best for a locket; or they may be different views of the same face taken upon the same plate for the purpose of preserving them together, or they may be daguerreotypes of different persons as different members of a family; or lastly, stereoscopic pictures may be thus taken with a suitably arranged camera.

It is evident that as the frame A B remains stationary, the opening C when once placed in the axis of the camera will not change, and the successive pictures will all be taken with equal correctness; and the changes are so quickly made that the aperture of the camera need not be covered from first to last, unless different positions or different objects are taken.

The guide-piece L, or some equivalent thereof, is absolutely essential, as the attempt to hold the block I by hand would shake the camera or move it from its normal position whilst the picture was being taken.

Heretofore I have spoken of the above contrivance as calcuated to take four pictures upon the same plate; it is evident, however, that it may be so arranged as to take any desired number, as six or eight for example, without departing from the principle of my invention.

31 CLAIM.—What I claim as my invention and desire to secure by letters patent is:

The within-described plate-holder, in combination with the frame in which it moves, constructed and operating in the manner and for the purpose substantially as herein set forth.

ALBERT S. SOUTHWORTH.

Witnesses:
SAM. COOPER.
JOHN S. CLOW.

EXHIBIT NO. 2.

The U. S. Patent Office to all persons to whom these presents shall come, greeting:

This is to certify that the annexed is a true copy from the records of this office of the letters patent and certificate of extension granted Albert S. Southworth, dated Sept. 25th, 1860, No. 1049, for plate-holder for cameras.

In testimony whereof I, J. M. Thacher, Acting Commissioner of Patents, have caused the seal of the Patent Office to be hereunto affixed this third day of November, in the year of our Lord one thousand eight hundred and seventy-three, and of the Independence of the United States the ninety-eighth.

[SEAL.]

J. M. THACHER,
Acting Commissioner.

The United States of America to all to whom these letters patents shall come:

Whereas Albert S. Southworth, of Boston, Massachusetts, has alleged that he has invented a new and useful plate-holder for cameras (for which letters patent were issued to him, dated April 10th, 1855,
33 which letters having been surrendered by him, the same have been cancelled, and new letters ordered to issue to him on an amended specification), which he states has not been known or used before his application, has made oath that he is a citizen of the United States, that he does verily believe that he is the original and first inventor or discoverer of the said plate-holder, and that the same hath not, to the best of his knowledge and belief, been previously known or used, has paid into the Treasury of the United States the sum of fifteen dollars, and presented a petition to the Commissioner of Patents signifying a desire of obtaining an exclusive property in the said plate-holder, and praying that a patent may be granted for that purpose:

These are therefore to grant, according to law, to the said Albert S. Southworth, his heirs, administrators, or assigns, for the term of fourteen years from the tenth day of April, one thousand eight hundred and fifty-five, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used, the said plate-holder, a description whereof is given in the words of the said Albert S. Southworth in the schedule hereunto annexed, and is made part of these presents.

In testimony whereof I have caused these letters to be made patent, and the seal of the Patent Office has been hereunto affixed.

Given under my hand, at the city of Washington, this twenty-fifth day of September, in the year of our Lord one thousand eight hundred and sixty, and of the Independence of the United States of America the eighty-fifth.

JACOB THOMPSON,
Secretary of the Interior.

Countersigned and sealed with the seal of the Patent Office.
[L. S.] PHILIP F. THOMAS,
Commissioner of Patents.

(Here follows diagram marked page 32.)

Albert S. Southworth, of Boston, Mass. Letters patent No. 12700, dated April 10, 1855; reissne No. 1049, dated September 25, 1860.

To all whom it may concern:

Be it known that I, Albert S. Southworth, of Boston, in the
34 county of Suffolk and State of Massachusetts, have invented certain improvements in taking photographic impressions, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Fig. 1 is a front view of the apparatus which I employ in carrying out my invention.

Fig. 2 is a rear view.

Fig. 3, a similar view, the cover being dropped into a horizontal position.

Fig. 4, a vertical section through the centre.

Fig. 5, an end view.

Fig. 6, details which will be referred to hereafter.

Fig. 7, the slider.

In taking daguerreotypes, photographs, etc., it has been customary to use a separate plate for each impression, the plate being removed from the camera and replaced by another; where several impressions of the same object were to be taken as in multiplying copies, or for the purpose of selecting the "best timed" picture, this caused considerable delay and trouble; to obviate which is the object of my present invention, which consists in bringing successively different portions of the same plate, or several smaller plates secured in one plate-holder, into the field of the lens of the camera.

In carrying out my invention, I have made use of a peculiarly arranged frame in which the plate-holder is permitted to slide, and in which the position of the plate-holder is definitely indicated to the operator so that he can quickly and accurately adjust the plate or plates; the accompanying drawings and description so explaining the same, that others skilled in the art may understand and use my invention.

The frame which guides the motion of the plate-holder is constructed as follow: A is the front plate, immediately in the rear of which is a zinc plate, B. In the centre of this plate is the hole C (seen in blue in Fig. 2), which is closed by the zinc slider D (Fig. 7), in the customary manner. Around the borders of this frame are the strips E, seen in section in Fig. 4, and in dotted lines in Fig. 1.

(Here follows diagram marked page 35.)

36 The rear plate F of this frame is hinged to one of the strips E, at *b;* between this plate and the zinc-plate B, and within the space enclosed by the strips E, slides the plate-holder which is constructed as follows: G is the frame of the plate-holder, into the rectangular opening of which is inserted the daguerreotype plate seen in red in Figs. 2 and 4, and in dotted lines in Fig. 1. The back plate H rests

against the daguerreotype plate and holds it in place. The plate-holder thus constructed is allowed to take four different positions within its carrying-frame so as to bring the four different portions, 1, 2, 3, and 4, Fig. 2, of the plate successively opposite to the opening C. It is guided in its motions in the following manner: I is a block attached to the back plate of the plate-holder, which projects through a rectangular opening, K, in the hinged plate F; the block I is moved in succession into the four corners of the opening K, by which means the four different portions of the daguerreotype plate are brought opposite to the opening C. The motions of the block I are regulated by the guide L, hinged to the plate F at *d*. When this block is in the position seen in Fig. 2, the block I rests upon its top edge and one corner of the daguerreotype plate (3) is opposite to the hole C; when the block I is slidden to the opposite corner of the opening K, still resting upon the piece L, another portion (4) of the daguerreotype plate is brought opposite the opening C. The guide-piece L is then thrown back as seen in Fig. 4, and the block I is allowed to drop into the right-hand lower corner of the opening K, the block I, as it descends, being guided by the edge *a*, and the portion (1) of the daguerreotype plate is brought opposite the opening C.

By another movement, the block I is thrown into the left-hand corner of the opening K, the block I sliding in the channel *c* when the portion (2) of the daguerreotype plate is exposed to the opening C. I am thus enabled to take four impressions upon different portions of the same plate. These may be miniatures of the same person taken as before stated, for the purpose of selecting the best for a locket, or they may be different views of the same face taken upon the same plate for the purpose of preserving them together, or they may be daguerreo-
37 types of different persons, as different members of a family; or,
lastly, stereoscopic pictures may be thus taken with a suitably arranged camera.

It is evident that as the frame A B remains stationary, the opening C when once placed in the axis of the camera will not change, and the successive pictures will all be taken with equal correctness; and the changes are so quickly made that the aperture of the camera need not be covered from first to last, unless different positions or different objects are desired.

The guide-piece L, or some equivalent thereof, is absolutely essential, as the attempt to hold the block I by hand would shake the camera or move it from its normal position whilst the picture was being taken.

Heretofore I have spoken of the above contrivance as calculated to take four pictures upon the same plate; it is evident, however, that it may be so arranged as to take any desired number, as six or eight, for example, without departing from the principle of my invention. In this case, however, I use suitable grooves, stops, or indices by which the operator adjusts the positions of the plate substantially on the same principle that he uses the corners of the opening K, in the above-described apparatus.

It is evident that my improvement may be embodied by causing the lens of the camera to be made adjustable in different positions with respect to the plate, while the plate remains stationary, so that different portions of the plate may be brought into the field of the lens. This I ave tried, but do not consider it practically so good a plan as the fore-oing as it necessitates a change of position of the camera itself or of e objects.

CLAIM.—What I claim as my invention, and desire to secure by letters patent, is bringing the different portions of a single plate or several smaller plates successively into the field of the lens of the camera, substantially in the manner and for the purpose specified.

ALBERT S. SOUTHWORTH.

Witnesses:
A. H. BICKNELL.
J. J. HAWES.

38 Whereas, upon the petition of Albert S. Southworth, of Boston, Massachusetts, for the extension of the patent granted to him April 10th, 1855, and reissued September 25th, 1860, the undersigned, in accordance with the 18th section of the act of Congress approved the 4th day of July, 1836, entitled "An act to promote the progress of the useful arts, and to repeal all acts and parts of acts heretofore made for that purpose," and the act approved the 27th day of May, 1848, entitled "An act to provide additional examiners in the Patent Office, and for other purposes," did, on this 8th day of April, 1869, decide that said patent ought to be extended:

Now, therefore, I, Elisha Foote, Commissioner of Patents, by virtue of the power vested in me by said acts of Congress, do renew and extend the said patent, and certify that the same is hereby extended for the term of seven years from and after the expiration of the first term, viz, from 10th day of April, 1869; which certificate being duly entered of record in the Patent Office, the said patent has now the same effect in law as though the same had been originally granted for the term of twenty-one years.

In testimony whereof I have caused the seal of the Patent Office to be hereunto affixed this 8th day of April, 1869, and of the Independence of the United States the ninety-third.

[L. S.] ELISHA FOOTE,
Commissioner.

39 *Agreement.*

SIMON WING ET AL.
vs.
E. ANTHONY ET ALS.

United States circuit court, southern district of New York.

It is agreed that the assignments described or referred to in the bill of complaint in the above-named case, were executed and recorded as stated in the bill, and no proofs thereof are to be required.

It is admitted that prior to the date of the bill and subsequently to the assignment last named in the bill the defendants caused to be manufactured and sold sundry multiplying camera-boxes containing certain devices by means of which photographic pictures could be multiplied in the manner and by the means substantialy as described below.

The plate or plates upon which the pictures are to be taken is placed in a shield or plate-holder, and the shield or plate-holder may be made to slide upward and downward as well as from side to side in the manner as shown in camera-boxes, marked Exhibit 3 and Exhibit 4, produced by defendants as specimens of the multiplying camera-boxe manufactured and sold by them as above.

The same exhibits also show the registers and contrivances by whi the distance through which the plate-holder is to be moved to produce certain desired results, and by which the plate-holder is held in proper position.

By means of the above-named devices for sliding the plate-holder after the taking of one picture or of one group of pictures (the number depending upon the number of lenses used) another portion of the plate, or another plate in the same plate-holder, is brought into similar position as to the focus of the lens, thus successively producing pictures or groups of pictures exactly similar or alike.

40 For further description page 158 and the first two-thirds of page 159 of Anthony's Photographic Bulletin, vol. 4, No. 5, for May, 1873, marked Exhibit 5, are made part of the case, and it is admitted that the defendants are and heretofore have been the publishers and proprietors of said Bulletin, and caused the publication of said pages.

The defendants admit that the devices for sliding and for regulating and retaining in position the plate-holder above described and referred to are useful, but they do not admit that they have infringed any patent named or referred to in complainants' bill.

JOHN S. ABBOTT,
Counsel for Complainants.
KELLER & BLAKE,
For Respondents.

43 EVIDENCE FOR COMPLAINANTS.

Deposition of Simon Wing.

JANUARY 6, 1874.

SIMON WING, witness for the plaintiffs, being first duly sworn, in answer to interrogatories proposed by JOHN S. ABBOTT, Esq., counsel for plaintiffs, testified as follows:

Int. 1. Please give your name, age, residence, business, and place of business.

Ans. My name is Simon Wing; age, forty-seven; residence, Boston, Mass.; photographer and manufacturer of photographic stock, at 257 Washington street, Boston; factory in Charlestown, Mass.

Int. 2. Are you one of the plaintiffs in the above-named case?

Ans. I am.

Int. 3. How long have you been engaged in the photographic business, and how extensively?

Ans. I commenced making daguerreotypes in 1846. Have been in the business most all the time since, very extensively.

Int. 4. What do you manufacture at your manufactory in Charlestown?

Ans. Cameras, and several kinds of stock that we use in our business.

Int. 5. Please examine Exhibits No. 1 and No. 2 in this case, and state whether you are acquainted with the patents therein described.

Ans. I have examined them and I am acquainted with those patents.

Int. 6. Whether you have used in your photographic business
44 cameras made under those patents; if yea, when did you commence using them, and where did you first obtain one?

Ans. I have used them. I commenced using them soon after the patent was granted, and have ever since. I first obtained one at Benjamin French's, 109 Washington street, Boston.

Int. 7. Please describe the mode of taking photographic pictures prior to that invention.

Ans. It was by using a camera-box with the tube permanently attached to the front of the box and the shield containing the plate the full size of the back end of the box, with no chance for moving the plate, otherwise than to take it from the camera-box and out of the shield and reversing the plate the other end up; so that after one impression was made on one end of the plate, it must be taken out and reversed before another picture can be made on the other end of the plate.

Int. 8. Prior to the granting of the above patent, did you know or had you heard of any mode or device or camera by which more than one picture could be taken within the focus of the lens without first removing the plate from the shield or plate holder?

Ans. No way to make more than one behind the middle of the lens. A shield was sometimes used containing two slides, so that by drawing one slide and swinging the instrument so that the light would fall obliquely on one-half of the plate, and after that impression was made put that slide in and swing the box so that the light would pass obliquely on the other side of the plate and drawing the other slide, we could make two on one plate without taking the plate out of the shield; but they were not made behind the middle of the tube as in the patent instrument made by Southworth.

Int. 9. State whether in your factory at Charlestown you have made camera-boxes for sale under said patent, and such as are described in the patent as extended.

Ans. I have.

Int. 10. To what extent, whether few or many?

Ans. Quite a number of dozens.

Int. 11. State, if you know, whether camera-boxes made conformably to said patent are extensively used and how extensively in the United States.

45 Ans. They are very extensively used; probably there is not one photographer in ten, if one in fifty, that has not used one of some kind made under the Southworth invention.

Int. 12. Please describe the advantages of this patented article and state its practical working or operation.

Ans. The advantages are so large it would require a very extensive answer to get it all down. First, it saves time. It is a great saver of time, for by preparing a large piece of plate or glass hundreds of impressions can be made about as quick as one impression before the invention, and where these impressions are made on glass to be used as type or negatives for printing on paper, it is exceedingly large in doing large jobs of photograph work; and another advantage, where portraits are being made, where different positions and different expressions, in order to obtain the best and most satisfactory before the person sitting gets tired, as was the case before the multiplying shield was invented. We sometimes use one lens or one tube attached to a block so that it can be removed and other blocks with two or four or more tubes put in its place; then we prepare whatever size glass or plate we desire to accommodate the amount of work we wish to do and place it in the back end of the camera, so that the small portion of the plate can be exposed to the image, and then by moving horizontally and perpendicularly we can cover the whole of the prepared plate with impressions.

Int. 13. Whether these impressions so produced are similar to each other?

Ans. They can be made almost exactly alike or varied, lighter or darker, or different positions, as the operator desires; but they are all made behind the best part of the field of the lens, or in the best part of the field of the lens.

Int. 14. Please examine Exhibit No. 3 in this case, and state how its construction and practical working compare with the said patented article.

(Objected to as immaterial and incompetent.)

Ans. It is the same.

Int. 15. Please examine Exhibit No. 4 in this case and state whether it contains the patented invention as described in said patent and the extension thereof.

46 Ans. I have examined it, and it does.

Int. 16. Please examine Exhibit No. 5 in this case, being page 158 and first two-thirds of 159 in Anthony's Photographic Bulletin for May, 1873, and state whether the Figures 1 and 2 on page 158, and the description on the first two-thirds of p. 159, exhibit and describe the aforesaid patented invention.

Ans. I have read those descriptions and seen the drawings or figures, and consider them a good description of the camera made under the Southworth patent.

Int. 17. If you know any other fact material to the plaintiffs, please state the same.

Ans. I know a good many facts, but I presume I can have a chance to state them, if necessary, hereafter.

Int. 18. Do any occur to you now that are material, except such as you suppose may be in rebuttal?

Ans. I have found a large number of these boxes in the market and in use that were made by or sold by E. & H. T. Anthony and others, which have been made without the consent of the patentee or the assignees.

Cross-examination by CHARLES F. BLAKE, Esq., of counsel for defendants:

Cross-int. 1. What do you understand to be the invention secured by the reissued Southworth patent?

Ans. The making of several pictures successively in the best part of the field of the lens in the camera-box.

Cross-int. 2. What is the best part of the lens?

Ans. The best part of the field of the lens is that which is behind the middle of the lenses.

Cross-int. 3. Do you understand the Southworth reissue to secure the exclusive right to make successive pictures through the best part of the lens, by whatever apparatus this may be effected?

Ans. All except what was in use before the patent or the invention was made, or that apparatus where no multiplication is desired of the impressions; the same instruments are still in use that were
47 before the invention, and we do not expect to prevent any one
from using the best part of the field of the lens for producing one at a time, or more than one at a time, if they will use them the same as we did before the invention.

Cross-int. 4. Were there, before the invention of Southworth, frames by which successive pictures were produced through the best part of the lens in the camera-box?

Ans. There was not.

Cross-int. 5. Were there, to your knowledge, prior to Southworth's invention, any devices by which the plate was carried by a movable frame behind the lens in such a manner as to produce successive images of the object to be taken?

Ans. There was not.

Cross-int. 6. Do I understand you then to mean that the Southworth patent covers producing on the same plate successive images of the object, by whatever means or apparatus this is accomplished?

Ans. All that are produced behind the middle of the field of the lens successively on the same plate.

Cross-int. 7. Do you understand the drawings of the Southworth reissue?

Ans. I do, and have a model here.

Cross-int. 8. Do you consider the piece L to be essential to the operation of the apparatus described in that reissue?

Ans. Yes; it is essential in that form; you must have that or an equivalent.

Cross-int. 9. Please point out the piece L in the Exhibits 3 and 4.

Ans. In Exhibit 3 it is the wooden L-shaped block at the bottom of the sliding-frame. In Exhibit 4 it is the spring-catch at the side.

Cross-int. 10. Does not the piece L in the patent guide the movement of the frame laterally and vertically?

Ans. It does, in part.

Cross-int. 11. Is not that its purpose?

Ans. Its purpose was the same as the L in Exhibit 3, to hold up the plate in position behind the lens while successively impressions were made horizontally.

48 Cross-int. 12. Does not the piece L in the patent operate to produce an irregular movement of the plate?

Ans. No more than the one in Exhibit 3.

Cross-int. 13. Would a sliding-frame having a horizontal movement only, so adjusted as to make successive images on the same plate through the centre of the lens, be an infringement of the Southworth reissue?

Ans. It would.

Cross-int. 14. Would it if such frame had a vertical movement only?

Ans. It would.

Cross-int. 15. Would it if it had a diagonal movement?

Ans. It would with any movement that would keep the surface of the plate in focus and bring a different portion of the plate into the best portion of the field of the camera.

Cross-int. 16. And this without reference to how its movement was guided or directed?

Ans. Any apparatus that would carry out that claim given in the letters patent.

Cross-int. 17. Some of the questions I have asked you have related to what was known before the date of Southworth's invention; in answering those questions what date have you assumed as the date of that invention?

Ans. 1846.

Cross-int. 18. Were there between 1846 and the date of the application for the patent any devices practiced in the United States for producing in the camera on the same plate successive pictures through the best part of the lens; and, if so, what were they?

Ans. I haven't the date of the application of that patent; assuming it to be about November, 1854, there was none in the United States.

Cross-int. 19. Was there anything anywhere, and what was it?

Ans. If there was anything anywhere, Latimer Clark, of England gives a description, I think, of something that comes very near to it, if not quite, in 1853.

(Objected to by plaintiffs' counsel, as matter not within knowledge of witness, incompetent, and inadmissible.)

49 Cross-int. 20. Where is this description to be found?

(Objected to as incompetent.)

Ans. It is in the journal, printed in May, 1853.

SIMON WING.

Deposition of Albert S. Southworth.

JANUARY 7, 1874.

ALBERT S. SOUTHWORTH, a witness for plaintiffs, being first duly sworn, in answer to interrogatories proposed by JOHN S. ABBOTT, Esq., counsel for plaintiff' testified as follows:

Int. 1. Please state your name, age, residence, and business.

Ans. My name is Albert S. Southworth; age, sixty-three; residence, Boston, Mass. I have been in the photographing business; the last few years I have connected photographing with the business of an expert in handwriting, using photographing for illustration.

Int. 2. How long have you been employed as a photographer, and in business connected therewith?

Ans. Since the winter of 1839-'40.

Int. 3. State pretty fully what opportunities you have had for obtaining a practical knowledge of photographing in its various branches.

Ans. I should say the best possible opportunities, on account of my being one of the very first to take up the art as a business, and my acquaintance with all of the scientific operators, and with all the operators at that time in the country, as well as from my own efforts to improve the art by invention and discovery, it being then entirely new and little or nothing known about it, except its first principles, either in regard to apparatus and chemicals necessary, or in regard to its manipulations.

Int. 4. State whether or not you have frequently been examined as an expert in matters involving the science of photography or its applications.

Ans. I have.

(Here follows photograph marked page 50.)

51 Int. 5. Please examine Exhibit No. 2 in this case and state whether you are the patentee named therein, and whether you are one of the plaintiffs in this case.

Ans. I am the patentee named in Exhibit No. 2, and one of the plaintiffs in this case.

Int. 6. Whether you were a citizen of the United States when the letters patent Exhibit No. 1 in this case were applied for.

Ans. I was; always have been.

Int. 7. Please examine Exhibit No. 6, now put into this case, and state when, by whom, for whom, and for what purpose it was made.

Ans. This camera was made in the autumn of 1846, by Ethan N. Coburn, of Boston, who was a workman then at work for me, made by my direction, entirely after my plan, for me, for the purpose of more rapidly taking pictures than the form or fashion of camera then in use, and taking them in the axis of the focus of the lens. Perhaps I should say he was at work for me then at Post Mills, Thetford, Vermont, doing his work there and sending it to me in Boston.

Int. 8. Are you able to state with exactness the date when you received this exhibit? And, if so, state your means of knowing with certainty.

Ans. I am able to do so from an invoice-record made at the date in my books regularly.

Int. 9. Have you that invoice-book now before you? If so, state the date when said exhibit was received.

Ans. I have the book now before me; it was received under the date Nov. 25, 1846.

Int. 10. Whether or not a frame or frames, holders or slides, were made at the same time and by the same person, to be used with said exhibit? If so, describe the same, and describe the practical way or operations by which the taking of photographic pictures successively was or could be accomplished by means of this camera, and wherein it differed from cameras previously in use.

Ans. I do not now remember particularly about the frames, but have no doubt that there were single frames made to slide into 52 these grooves, by the same person. This differs from cameras previously in use in regard to the wings that extend each way on the rear of the box. Previously the camera had no such wings, and but one plate could be adjusted to the camera at a time. In this there is opportunity for two plates and a ground glass. After the adjustment of the instrument to receive the light upon the ground glass in its proper place, the glass is then withdrawn at the top through the lid and the plates slid into position in succession, saving considerable time in the manipulation from the use of the former camera. More plates than two might have been used; a single frame with several plates in it might have been used; a single plate might have had several pictures taken upon it in one frame. The design was to have one frame and one plate, and so arranged as to have several pictures upon it.

Int. 11. Who discovered, invented, or devised the plan or contrivances described by you in the last answer?

Ans. I did them myself, alone.

Int. 12. Had you any knowledge or information derived from any other person or source of any mode by which photographic pictures could be successively taken upon the same plate without removing the plate from the frame, and taken in the axis or directly behind the lens?

A. I had none whatever.

Int. 13. Please examine Exhibits Nos. 7, 8, 9, 10, 11, now put into this case, and describe them, and the object or use for which they were made, and when made, and by whom, for whom, and by whose direction.

Ans. Exhibit 7 is the sliding front of a camera made by one Stewart, at work at our rooms at the time Exhibit 6 was received from Coburn. The rest of the box, except one frame marked Exhibit No. 8, and three diaphragms, marked 9, 10 and 11, are not, that I know of, in existence. I have here a model of the principle of the whole camera. Exhibit No. 7 answers to the slide in the model holding the tube. (The model referred to is put into the case marked Exhibit 12.) The many little holes in No. 7, partially perforating the board, are apertures for pins to 53 hold it in place when adjusted so as to occupy the desired portion of the plate where one of the pictures is to be made. The frame marked Exhibit No. 8 will take the place of the ground glass on adjustment—the plate havin goutside of the tin slide one ot fle Exhibits

9, 10, or 11. The manner of manipulation was to adjust these diaphra'ms to take the desired portion of the plate in the first instance, and after, by change of the position of the diaphragms from side to side, and end to end, and reversing sides, at the same time moving the lens so as to bring the axis of the focus of the lens in the centre of the desired portion of the plate; thus covering the plate with such sizes and such numbers as the operator chose. By diaphragms connected with this frame I mean Exhibits 8, 9, and 10.

These Exhibits 7, 8, 9, 10, 11 were made by my direction by Mr. Stewart, who was then at work for us, and had been for a long time and continued at work for us for a long time after that, at our rooms, and were made between November, 1846, and April, 1847.

Int. 14. State whether with the camera with which Exhibits 7 to 11, inclusive, were used you actuallytook pictures in the manner you have described; and, if so, how early.

Ans. I did several daguerreotype plates of pictures with this instrument, covering the plates with different heads, and in the spring of 1847 is the first recollection I have, though I have no doubt it was tried during the winter. My first picture was some scholars from Mrs. Burrill's school, South Boston, the first I recollect.

Int. 15. Whether at the time when Exhibit No. 6 was constructed you had any purpose or design to procure a patent for the improvement thereinbefore described?

Ans. I cannot say that I thought of a patent when giving Coburn directions to make it, but the necessity for that kind of a camera arose from my taking pictures of the sun in an eclipse, several upon a plate, in the great eclipse of May, 1846, having then used a temporary camera, but being obliged to swing it from side to side, and raise and lower it so as to bring the images upon different portions of the plate. On receiving this invoice of cameras from Coburn, of which Exhibit No. 6 is one, I found I had only the lateral motion, but not the verti- 54 cal; and I then had constructed by Stewart the camera of which Exhibits 7 to 11, inclusive, are a part, for the purpose of getting both motions. I then intended to get a patent, and kept these Exhibits 6 to 11, inclusive, generally secluded from those who would be likely to infringe upon me. I did, however, show confidentially and privately to Mr. Langenheim, of Philadelphia, and Mr. Edward White, of New York, both gentlemen in our business, with an injunction of secresy, both the pictures and apparatus with which they were made.

Int. 16. State as accurately as you can the time when you made your application for a patent.

Ans. It must have been the winter of 1854–'5—probably in December.

Int. 17. Where were you living from the spring of 1847 till December, 1854?

Ans. I was in Boston, except about two years that I went to California, between 1849 and 1851; left March, 1849, and returned January, 1851.

Int. 18. What is Exhibit No. 12, and when was it made?

Ans. It shows the movement of the lens over the plate, as Exhibit No. 7 was moved over the plate. I can't tell when it was made; I should say five, six, or seven years since.

Int. 19. Please state whether, prior to your obtaining your patent Exhibit No. 1, you in point of fact permitted any person to use the invention and discovery already described by you, and whether in fact you at any time intended to abandon its use to the public, or gave up or abandoned your purpose and design to obtain a patent therefor?

Ans. I did not so permit any one or consent to its use, nor did I relinquish or intend to relinquish the invention in any manner, but intended to obtain a patent for it.

Int. 20. Why did you not make earlier application for a patent?

Ans. My means were very limited, and I was waiting after Stewart made the camera to which these Exhibits 7 to 11, inclusive, belong, not being able then pecuniarily to set him to work upon cameras, or then to devote my time upon it; and afterward I went to California,
55 partly to rest from my years of wearied study and exertion in this daguerreotype business, leaving my rooms in charge of my partner, my wife attending in the rooms, retaining all my pecuniary interest in the rooms, and expecting to return to them and to my business. On my return I found my health impaired from the climate, and did not that season recover it. The discovery of the stereoscope had been made about that time, and I took up the stereoscope and matters connected with it, and soon found that I was required to use this invention to secure perfect work. I applied for a caveat and for its repetition, and for two patents connected with the stereoscope particularly and then for this patent, Exhibit No. 1, as soon as I could conveniently get to it, taking what I considered the most important parts of the stereoscope and picture-making for the stereoscope in succession. The stereoscopic patents were pursued with my partner jointly, except this Exhibit No. 1, and the camera made by Coburn and the one by Stewart, which were my own exclusively.

Int. 21. How does the patent, Exhibit No. 1, and its reissue, Exhibit No. 2, compare with cameras parts of which are Exhibits No. 6, 7 to 11 inclusive, and 12; whether or not the principle in all is the same?

Ans. The objects and the results and the principle are precisely the same.

Int. 22. When you applied for patent Exhibit No. 1, was there in use, to your knowledge, any camera or device involving the same principle or invention?

Ans. There was not.

Int. 23. At that time, I mean when you made application for your patent Exhibit 1, state whether the model filed in the Patent Office, and the things claimed in your application for which a patent was requested, were solely your own invention.

Ans. The model and the things claimed were solely my own invention, without suggestion or assistance from any person in any manner whatever.

Int. 24. Please state whether said patented invention has proved useful, to what extent used, and describe its peculiar advantages.

Ans. It has proved very useful, surpassing any other improvement
56 ment in the apparatus since its discovery. It is universally used by all good operators in the country, many of them having many different cameras to which it is applied. In what is termed card-work, for miniatures from life and copies, the saving pecuniarily amounts to nearly one-half of the whole business, if not quite; so that to a person constantly employed, it would not be a large estimate to state the profit on that alone at fifty dollars a day, and I have known of as much as that for every day for three hundred days in succession. It is really a multiplying apparatus, enabling an operator to make pictures by the hundred in quicker time and with less trouble to himself and to the sitter than a dozen without it. It would be difficult to name all the advantages in an

establishment like some of our largest establishments, that properly belong to it; and it is applicable not only to pictures from life, and to copies from likenesses, but also to the multiplication of copies from models, specimens of furniture, machinery, and indeed to all the various kinds of work to which photography is applied, even to landscapes and out-door picture-making.

Int. 25. Please examine Exhibit No. 13 and state what it is.

Ans. This is one of the frames made for sale, like the model in the Patent Office; the tin plates in the same are diaphragms.

Int. 26. Please examine Exhibit No. 14, now put into the case, and state what it is, and describe the mode of taking photographic pictures with the same.

Ans. This represents such cameras as were in use, as regards frame and ground glass, before I had this one made by Coburn, called a half-plate camera frame, where the plate remains in one position and a single picture is taken. The ground glass receives the light from the object in the focus of the lens upon it, and then is removed and the frame inserted in its place.

Int. 27. Please examine Exhibit No. 16 and state what it is.

Ans. This is a working frame after the model of the patent Exhibit No. 1, adapted to be inserted in what was then called a half-plate camera, to take the place of the old fashioned frame and enable the operator to multiply pictures as he desired, making several different
57 sizes with only changing the frame, using the same instrument
and the same ground glass, as this No. 15 frame fits into the place of No. 14 frame.

Int. 28. Please examine Exhibit No. 3 in this case and state whether it is an infringement of your said patent; and, if so, wherein it infringes.

Ans. This is an infringement; in the first place it has the same movement of frame and plate, lateral and vertical, made to move so as to bring each picture into the focus of the lens.

Int. 29. Please examine Exhibit No. 4, now in the case, and state whether that is an infringement of your said patent; and, if so, wherein.

Ans. No. 4 is an infringement for the same reasons given in the former answer respecting No. 3.

Int. 30. Please examine Exhibit No. 5 in this case, being page 158 and first two-thirds of page 159 in Anthony's Photographic Bulletin for May, 1873, and state whether the figures on page 158 and the description on first two-thirds of page 159 are in any respect, and, if so in what, similar to your patented invention?

Ans. These figures are very good drawings of the lateral and vertical movement which brings that part of the plate on which the picture is at that moment desired to be made in the axis of the focus of the lens; the whole movement being like the frame patented, in its principle and its operation, and therefore an infringement on the patent No. 1. The description of the figures in the print is a very proper and correct one and describes a movement of the camera very like the patent No. 1 and is an infringement of it.

Adjourned to 2 p. m.

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2 O'CLOCK, p. m.

Parties reappeared and deposition proceeded.

Cross-examination by CHARLES F. BLAKE, Esq., of counsel for defendants:

Cross-int. 1. Was Exhibit No. 6 ever furnished with a slide or frame to carry a plate to make successive pictures on the same plate?

58 Ans. It was not, to my recollection.

Cross-int. 2. When did you first make a camera like Exhibit No. 6, furnished with a frame to carry a plate to make successive pictures on the same plate?

Ans. I think I used the sliding motion in a camera of that description about 1852, but do not recollect it was adapted to this camera at all; still, it might have been.

Cross-int. 3. Was this the first time that you used the sliding motion, namely, in 1852?

Ans. For multiplying or repeating upon one plate I think it was; I do not remember earlier, except the motion in the camera marked Exhibits 7 to 11 inclusive.

Cross-int. 4. After camera Exhibit 6 had been built for you, why did you have recourse to the devices described by you, embodied in Exhibits 7 to 11 inclusive, for the purpose of multiplying figures on the same plate?

Ans. There are several reasons; the first was that Exhibit 6 with the frame as it was gave me the privilege of making pictures by only one motion, the lateral, and the maker not being at hand, and when I came to see this, it being new to my observation except from the description I had given him to make it, I saw that I should be obliged to make new cameras for sale to carry out my idea; and one object being to save expense, I took an old camera and frame and had it made over in parts into Exhibits 7 to 11, so that when this idea should be carried out it could be somehow applied to cameras in use and save expense. Stewart was not so good a workman as Coburn, and I could not so well have nice work done by Stewart.

Cross-int. 5. When did you first offer for sale apparatus like Exhibit 12, embodying the devices embodied in Exhibits 7 to 11?

Ans. I never offered any of that description for sale at all.

Cross-int. 6. When did you first use apparatus like Exhibit 12?

Ans. I think the winter of 1846–'47; that is, the identical exhibits here from 7 to 11, and the parts missing.

Cross-int. 7. Did you find it useful and valuable in your business?

Ans. I used this only for experiments, and never applied it to pictures for sale.

59 Cross-int. 8. Why not?

Ans. There was no demand for pictures of that description was one reason.

Cross-int. 9. Any other reason?

Ans. The apparatus was rough and I had not time nor money to make a nice smooth one.

Cross-int. 10. What were the difficulties with the apparatus and how was it rough?

Ans. It was made by a man who worked for us who was not a finished workman, and it was partly an old box converted into a new instrument. We were using daguerrotype plates which cost a great deal to prepare nicely, and good pictures made in that way would have been quite expensive; there was no demand, no sale for them. The inventio was at least a dozen years ahead of the requirements of the professio

Cross-int. 11. When you say the apparatus was rough, do you mean that it produced imperfect impressions ?

Ans. I don't mean that; the impressions when produced, so far as relates to the instrument, were as likely to be perfect as any other pictures produced by a camera, and there was the same liability to failure. Successive daguerrotype pictures were usually not equally good, and therefore the smaller the plate the less loss, provided a picture was not good. Four successive pictures on one plate, made with this instrument like Exhibit 12 would not be likely to be equally good—not from any fault of the instrument, but from causes beyond our control; and an imperfect picture with three perfect ones upon a daguerreotype plate six and a half by eight and a half inches would not be as desirable or saleable as though several plates were tried and the best one selected of the same size.

Cross-int. 12. What were the causes beyond your control referred to in the last answer ?

Ans. Those which pertain especially to the stillness and expression of the sitter and the chemical preparations necessary to the picture.

Cross-int. 13. What are the difficulties connected with the stillness and expression of the sitter which you experienced in 1847 with apparatus like Exhibit 12 ?

60 Ans. If three heads in the same or different attitudes were good upon the plate, and in the fourth the sitter happened to move or to sit with an undesirable expression, it would not be profitable to cut up the plate or to polish off and resilver the whole plate; but more economical to make them on separate plates when using silvered plates as we were then doing.

Cross-int. 14. Then do I understand you that you did not use in your business apparatus like Exhibit 12 in 1847, because you did not find it practically useful to do so ?

Ans. I only used it for experiments. It would not have been profitable on daguerr'otype plates that we were then using; it was practicable enough so far as I understand it.

Cross-int. 15. What improvement have you since made on apparatus like Exhibit 12 to make it practically useful in your business ?

Ans. The improvement is principally the material upon which the pictures are made, and the greater certainty in what pertains to the chemistry of the picture and the adaptation of the movement to ordinary cameras. The patented models and the frames exhibited here like the patent are all adapted to the half-plate instrument. Exhibit No. 14 represents the old-fashioned half-plate instrument, and No. 15 the movable plate-holder adapted to it, like the model in the Patent Office.

Cross-int. 16. Do you mean by the last part of your answer that the adaptation of the instrument which is an improvement upon apparatus Exhibit 12 is the substitution of the movement of the frame carrying the plate for the movement of the lens, as shown in your patent ?

Ans. I mean that it is accomplishing the same thing in a different way. It is in this case a substitution.

Cross-int. 17. Have you ever used in your business an apparatus like Exhibit 12 with a moving lens ?

Ans. I have; a great deal.

Cross-int. 18. When first ?

Ans. I cannot now fix the time when we first used it. I should say probably about the time of the issue of the patent; I am not certain now.

61 Cross-int. 19. For what subjects did you use it ?

Ans. For miniatures and for landscape pictures generally, small size.

Cross-int. 20. Why did you not use it for larger pictures of individuals and of landscapes?

Ans. It would not have been convenient and would have been like adapting very large lenses to looking at small objects, perhaps.

Cross-int. 21. Why would it not have been convenient?

Ans. There is a limit to the sizes of lenses for particular purposes; and large lenses for the sake of taking several pictures upon a plate, and making large pictures, would require large and unwieldy plates, therefore such an experiment would not be a judicious one.

Cross-int. 22. Would it not be inconvenient to use the movable lens instead of the movable plate-holder, for the reason given in the last sentence of the specification of your reissue, to wit, that the movement of the lens is not "practically so good a plan as the foregoing" (that is, the use of the sliding-plate) "as it necessitates a change of position of the camera itself or of the object"?

Ans. That expression refers to what is general with regard to operators; but in our rooms our work required the use of both movements, viz, the plate in the holder sometimes and the lenses sometimes; we therefore had both ready constantly and used them as required. Other operators in process of time found a necessity for both movements and use them both now; while for the ordinary operator, who has not a great variety of work to do, to slide the frame is probably the better way.

Cross-int. 23. Do you mean by this last answer that for some kind of work you find the moving the lens and the camera or object the better way, and for others you find the sliding plate-holder the better way?

Ans. I do not move the camera when I move the lens, usually, and do find that for some kinds of work moving the lens is better than moving the plate and frame.

Cross-int. 24. When you move the lens and do not move the camera do you move the object?

Ans. I do not, except in copying.

62 Cross-int. 25. Why do you move it in copying?

Ans. Often in copying we are obliged to bring the plate to be copied very near the lens, especially when enlarging from a very small picture to card size; it would then be impracticable to move the lens without the picture being attached to a frame and carried with it. It would likewise be impracticable, in many instances, to use more than one lens, from the fact that a picture to be perfectly copied and keep its proportions must stand perpendicular to the axis of the lens and directly in front of it, it being necessary to bring it very near to the lens for the purpose of enlarging.

Cross-int. 26. Is the following statement in the specification of your reissue true or false, "it is evident that my improvement may be embodied by causing the lens of the camera to be made adjustable in different positions, with respect to the plate, while the plate remains stationary, so that different portions of the plate may be brought into the field of the lens; this I have tried, but do not consider it practically so good a plan as the foregoing, as it necessitates a change of position of the camera itself or the object"—I ask you to say whether this statement in your specification is true or is not true?

Ans. It is true, generally.

Cross-int. 27. Please state in what classes of cases it is not true.

Ans. It is not true in the class of cases just referred to in answer to cross-int. 25—in making stereoscopic pictures, whenever as perfectly made as they can be, two lenses should be so arranged as to be moved over the plate and take pictures on a diagonal line at an angle of forty-five degrees, instead of a horizontal line as usually taken; upon a plate suitable to make four pictures, making two stereoscopic mates, the two lenses should rotate so as to take pictures diagonally upon the plate at opposite corners at the same instant; having covered one diagonal line and made one set of pictures upon opposite corners, the board holding the lenses should be turned upon its axis so as to bring the lenses opposite the diagonal line of the plate upon the other corners; this should be done with either heads or landscapes of the ordinary stereoscopic size, and is the easiest and most practical way that I know of to make a perfect stereoscopic picture and make both pictures at the same instant.

63 Cross int. 28. But in taking ordinary photographs the angle at which the image falls upon the plate is a right angle, is it not?

Ans. As I understand the question, it is; that is, the object should be directly in front of the lens and the image directly behind it, and a line drawn from the centre of the object directly through the axis of the lens would strike in the centre of the image to be made.

Cross-int. 29. You say you first used the principle of the sliding plate-holder in 1852, except as shown in Exhibits 7 to 11; please describe the apparatus you then used, and state for what purpose you used it.

Ans. It was a frame within what we termed a false frame, adapted to half-sized camera, perhaps, having rabbited grooves suitable for holding what were termed quarter and medium plate frames—the false frame allowing the quarter and medium frame to carry the plate across the axis of the focus of the lens, so as to make a picture on both ends of the plate across the plate as it stood crosswise—the plate and frame being carried across the axis of the focus of the lens nearly or quite its whole length.

Cross-int. 30. This frame had only a lateral movement, had it?

Ans. I think that was all in the first experiment with it.

Cross-int. 31. Did you use this in your business; and, if so, how long?

Ans. I don't think I made much use of the first one in 1852, but I immediately had a plate frame made and about the same time; very soon after this I took out a caveat in the name of myself and partner for the making of stereoscopic pictures something as I have described, or as I have described; I don't remember how it was expressed.

Cross-int. 32. Have you a copy of this caveat, and will you produce it and annex it to this deposition?

Ans. I must refer you to Mr. Abbott.

(Mr. Abbott, counsel for plaintiff, at request of defendants' counsel, says that he will procure from Washington and put in evidence copies of the two caveats before referred to.)

Cross-int. 33. You were then engaged in the production and invention of stereoscopic apparatus, were you not?

64 Ans. Very much; in invention connected with stereoscopic pictures, angles, or the positions of the points of sight from which stereoscopic pictures should be made, etc.

Cross-int. 34. Prior to the date of the original patent of April, 1855, you took out one or more patents for stereoscopic apparatus, did you not?

Ans. Myself and partner.

Cross-int. 35. It was in one of these that a sliding plate-holder was first described, was it not; and, if yea, which one?

(Objected to as calling for secondary evidence.)

Ans. I don't know that any sliding plate-holder is described in any patent, except that of April, 1855, Exhibit No. 1.

Cross-int. 36. When did you first devise and make an apparatus having the piece L described in your patent?

Ans. I should say, in the first place, I know I made one in 1854; whether either of my sliding movements previously made had a stop that answers to piece L I cannot say. I know that there was one made in the autumn of 1854. I am sure I had a frame that had a gauge or stop to it some time previous; whether it is possible to find that I do not know.

Cross-int. 37. When did you first use in your business, and when first sell, an apparatus like that described in your reissued letters patent?

Ans. I cannot say when we first began to use it, but I judge about the time the patent was granted; not long previously. I think there were but two or three sold before 1859, 1860, or 1861; the exact time of these sales I cannot say.

Cross-int. 38. And when did you begin to use in your business a camera with a sliding lens?

Ans. I should say about the same time; not varying much from the time the patent was granted.

Cross-int. 39. State what reasons you had for not making application for a patent earlier than you did.

Ans. One of my reasons was because of the want of pecuniary means to have models made and employ a man to do it, my own time likewise being occupied in earning money to supply my daily
65 needs, that especially from 1847 to 1849. I then went to California, leaving my business, as I have stated in a former answer on the direct examination, and from that the succeeding portions of that answer may be taken for my answer to this question.

Cross-int. 40. Please look at the answer which you made to the same question, in the case of Wing vs. Schoonmaker, and state whether there was not another reason, and what it was.

Ans. This answer in Wing vs. Schoonmaker, in its two first lines, is embraced in my last answer entirely, except in the use of the word "perfected," for I only intended here that I had not had a model made and finished the apparatus, and did not intend to convey any idea that the invention or discovery was not perfect.

Cross-int. 41. Are not the first two lines of your former answer in Wing vs. Schoonmaker as follows: "I had not perfected the mechanical parts to my satisfaction so as to carry out my idea readily?"

Ans. It so reads here, and I have no doubt but what it is correct as I then expressed it.

Cross-int. 42. And do I now rightly understand you to say, in your answer to the 40th cross-interrogatory, that what this language meant was, "the want of pecuniary means to have a model made and employ a man to do it," as stated in your answer to the 39th cross-interrogatory?

Ans. That was the fact in regard to it, for I had shown my apparatus and its results, confidentially, to two of the best men in the country of our profession, and then considered the invention perfected; the apparatus then made was not suitable for a model.

Cross-int. 43. Is this the only explanation you have to give of the language quoted from your answer in Wing vs. Schoonmaker?

Ans. I don't know that I need to give anything more.

Cross-int. 44. The apparatus you say you showed to eminent persons in your profession was the apparatus of which Exhibits 7 to 11 were parts, was it not?

Ans. It was.

Cross-int. 45. And you had not at that time made and used a sliding plate-holder, or an apparatus having a piece L, had you?

66 Ans. I had not.

Cross-int. 46. Did you ever describe in detail, in any patent, either the apparatus of which Exhibits 7 to 11 were parts, or the apparatus like Exhibit 12; and, if yea, when?

Ans. I do not know that I have described such an apparatus in any patent; what allusions might have been made to the movement of the lens in the patent or reissue I do not now remember; the patent and reissue show for themselves.

Cross-int. 47. Look at the last paragraph of the specification of your reissue and state whether it was put in by you.

Ans. This reissue was all put in by my direction by the patent agent, or person employed to do it, and this latter clause just now shown me, previous to the claim, I had inserted by my having previously invented this camera from Exhibits 7 to 11, and the parts that belonged with it, and has reference to that exhibit.

Cross-int. 48. Had you at that time any interest in that reissue?

Ans. I had.

Cross-int. 49. You stated in Wing vs. Schoonmaker that, using the apparatus of which Exhibits 7 to 11 were parts, you made a picture of the young ladies connected with Miss Burrill's school, in South Boston, of a gentleman and his family, and of a merchant on Milk street; were these pictures charged and paid for?

Ans. They were never carried from our rooms, were never framed, and were put in a tight box, and were the pictures shown to Messrs. Langenheim & White.

Direct examination resumed:

Int. 1. In this examination, when you have spoken of any patents obtained by you, or applied for by you, other than the exhibits in this case, and when you have spoken of any caveats filed by you, please state whether any of such applications, patents, or caveats were in your individual name or in the names of yourself and partner.

Ans. They were in the names of myself and partner, the firm of Southworth & Hawes.

Adjourned to January 8, 10 a. m.

67 JANUARY 8—10 a. m.

Parties reappeared and deposition proceeded:

Int. 2. Please refer to your answer to the 36th cross-interrogatory, and state the purpose of the piece L, also of the gauge or stop mentioned in that answer.

Ans. The purpose of the piece L is to assist as a guide to moving the plate and also in holding the frame that holds the plate in its place. The gauge on a frame made to slide with a lateral movement only was a latch falling through the top of the false frame and holding the plate-holder in its place as it was moved from point to point, making the stop so as to apportion the plate to the pictures to be taken, enabling us while looking upon the position of the latch and the outside of the camera to determine precisely what portion of the plate was exposed to the image in the camera.

Int. 3. Whether or not the said *guage* or stop was an equivalent for L?

Ans. I should say it was.

Int. 4. Please examine Exhibits 7 to 11 inclusive, and state whether in the camera of which those are parts there was any equivalent for L; and, if so, what?

Ans. Upon the Exhibit 7 on its face are the pin-holes made to hold the little pins or stops which were inserted as supports for the moving front when moved over the plate, and perform the same office for holding the front board or frame in which the lens was placed in its different positions as it moved over the plate, and are equivalent to L in the drawings of the reissued patent.

Int. 5. It appears in your testimony that two caveats were filed by your firm; please refer to your answer to 31st cross-interrogatory and state to which of those caveats you therein refer, whether to the one first filed or to the one last filed.

Ans. I refer to the first caveat filed.

Cross-examination resumed:

Cross-int. 50. In the apparatus described in your patent is not the piece L a guide as well as a support?

68 Ans. It is designed to assist in the guidance and may be considered a guide; yet the guiding movement is perfect without it.

Cross-int. 51. Is it not called in the patent a guide-piece and also a guide?

Ans. I presume it is; I don't remember.

Cross-int. 52. What is the guide in the camera embodying Exhibits 7 to 11 which guides the motion of Exhibit 7?

Ans. The guide for the first division of the plate is the size of the frame which encloses it, but for smaller sized work requiring less movement of the lens, the guide to position are pencil-marks made at right angles and numbered, which angles conform to the angles of the frame as shown in front in Exhibit 12, holding the sliding board or front in which the lens is placed.

Direct examination again resumed:

Int. Are there such pencil-marks on Exhibit No. 7; and, if so, when were they made?

Ans. There are, put on by myself when the front was made—I mean by front, Exhibit No. 7.

ALBERT S. SOUTHWORTH.

69 Circuit court of the United States for the southern district of New York. In equity.

SIMON WING ET ALS
vs.
EDWARD ANTHONY ET ALS.

I, Winslow Warren, U. S. commissioner and examiner, hereby certify that on the 6th day of January, 1874, appeared Simon Wing, and on the 7th and 8th, Albert S. Southworth, witnesses for the plaintiffs in the above case, and being first duly sworn to tell the truth, the whole truth, and nothing but the truth relative to the cause for which these depositions were taken, gave the foregoing depositions which were written down by me in their presence, read over to them, and then subscribed by them in my presence as and for their depositions.

Before me.

WINSLOW WARREN,
Examiner.

70 *Agreement.*

(It is stipulated between counsel for both parties that the testimony of Ethan N. Coburn and Nancy N. Hawes, taken in the suit of Wing vs. Schoonmaker, in the circuit court of the United States for the northern district of New York, may be read in evidence in this cause as if it had been taken herein, and defendants' counsel waives the objections to questions which appear in said testimony; and it is further agreed that Exhibit A 1 in said cause is identical with Exhibit No. 6 in this cause, and that Exhibits B 1 to B 5 therein are identical with Exhibits No. 7 to 11 inclusive in this cause.

WINSLOW WARREN,
Examiner.)

71 *Deposition of Ethan N. Coburn, taken, subscribed, and sworn to May 13, 1868, in the case of Simon Wing vs. Christopher C. Schoonmaker.*

Int. 1. State your name, age, residence, and occupation.

Ans. My name is Ethan N. Coburn; residence, Charlestown, Mass.; age, forty-seven; I am now a funeral undertaker.

Int. 2. Do you know Albert S. Southworth, of Boston, Mass.; and, if so, how long have you known him?

Ans. I know him, and have known him intimately since 1844; previous to that I had some knowledge of him, not so intimate as since.

Int. 3. Were you ever in the employment of Mr. Southworth; if so, when, in what capacity, and how long did you continue in such employment?

Ans. I have been in his employment from the early part of the year 1845, the first month of the year. I was continuously in his employment a year from that time, in the capacity of manufacturing daguerreotype apparatus.

Int. 4. Were you in his employ subsequent to the time you have mentioned; and, if so, when, and how long?

Ans. I was; I should be unable to say definitely how large a portion of the time; but from March, 1846, until the fall of 1847, I was a portion of the time in his employ, in the same business.

(Complainant here offers in evidence a portion of a camera-box with wings attached. Exhibit received and marked "Exhibit A 1.")

Int. 5. Look at Exhibit A 1, now shown you, and say when and where you first saw the same.

Ans. I should say that I first saw it, as near as my memory may serve me, in August, 1846, at Thetford, Vermont.

Int. 6. What was the nature of your connection with that machine?

72 Ans. I was the manufacturer of the box.

Int. 7. By whose direction did you make it?

Ans. By direction of Albert S. Southworth.

Int. 8. In whose employment were you at that time?

Ans. In Albert S. Southworth's; 'twas during that period of partial employment.

Int. 9. What was the object of this machine; for what was it to be used?

Ans. From my knowledge of the daguerreotype business, daily, almost daily, frequenting their operating-rooms during the year previous, this having the accompaniments of a daguerreotype-box, and I would say as exhibited here it is incomplete. I should say it was used for the purpose of taking daguerreotype pictures.

Int. 10. At the time Mr. Southworth directed you to make it did he state to you how he proposed to use it, or what it was for?

Ans. I am unable to say at this moment whether I received the impression from him at that time that it was for the purpose of multiplying pictures; that that was the object has been known to me for some time.

Int. 11. Where was your residence at this time?

Ans. Thetford, Vermont.

Int. 12. When did you go to Thetford?

Ans. I think I left Boston in the month of March, 1846, for Thetford. I had previously resided at Boston.

Int. 13. How long did you remain at Thetford?

Ans. From the above March until the following April, 1847.

Int. 14. What was Mr. Southworth doing at Thetford?

Ans. He was there on a vacation.

Int. 15. When did he go to Thetford, and when did he return to Boston, if at all?

Ans. I should think that he went in the month of August. He might have been there two or three weeks; I am not positive.

Int. 16. Was it while he was at Thetford he gave directions to make this camera-box?

Ans. It was.

Int. 17. Did you complete it while he was there?

73 Ans. I did not.

Int. 18. When did you complete it?

Ans. I am unable to say definitely, but I should say it was sent to him within a month or six weeks, in connection with other boxes; it might have been longer.

Int. 19. You say you returned to Boston in April, 1847; did you continue to work for Mr. Southworth after your return?

Ans. I did, partially.

Int. 20. Did you reside in Thetford at any other time than the time you have mentioned?

Ans. I had for quite a number of years previous to coming to Boston. I have not resided there since April, 1847.

Cross-examination:

Cross-int. 1. Will you swear positively, from your present memory, that Albert S. Southworth ever gave you directions to make box marked Exhibit A 1 herein?

Ans. I will.

Cross-int. 2. What did you mean by saying to plaintiff's counsel herein, just now, when he put the question to you whether Albert S. Southworth gave you directions to make said box A 1, that you presumed he did?

Ans. I haven't answered that I presumed he gave me directions to make it.

Cross-int. 3. What did you in your answer say you presumed?

Ans. It don't occur to me that I have answered by way of presumption. If I have given any latitude with regard to the identity of the box, it would come up with regard to its being the identical box, which I have no doubt it is; but as to its general form, it is identical with it.

Cross-int. 4. Will you swear positively that the box marked Exhibit A 1 is the identical box you say you made for Albert S. Southworth in your direct examination?

Ans. I will swear, if it is not, it is a perfect model. I say, in all frankness, I cannot swear positively; but, still, I have no doubt.

74 Direct examination resumed:

Int. 1. Please give the reason why you think Exhibit A 1 is the same box you made.

Ans. The manufacture of this box. In every corner, in the rounding of the corners, there is a gauge run around as a guide for the finishing up of the round; and another evidence is its corresponding to a pattern which I looked up to-day, by which the dovetailing is cut.

ETHAN N. COBURN.

Deposition of Mrs. Nancy N. Hawes, taken, subscribed, and sworn to May 14, 1868, *in the case of Simon Wing vs. Christopher C. Schoonmaker.*

Int. 1. Please state your name, age, and residence.

Ans. My name is Nancy N. Hawes; age, forty-eight; residence, Boston, Mass.

Int. 2. What is your relationship to Albert S. Southworth and to Josiah J. Hawes, members of the former firm of Southworth & Hawes?

Ans. A sister of Mr. Southworth and wife of Mr. Hawes.

Int. 3. If you were at any time accustomed to assist them in their business as daguerreotypists, state during what period it was, where it was, and what you were accustomed to do.

Ans. I commenced assisting my brother in 1841, and was in the rooms constantly until after he went to California, in 1850, I think, except occasionally I was absent a few weeks. I assisted in the operating-rooms, in coloring pictures and in waiting upon sitters, keeping the books and writing, and in every part of picture-making, daguerreotyping. The partnership of Southworth & Hawes was formed while I was there.

Int. 4. State, if you know, where your brother Albert was during the summer and fall of 1846.

75 Ans. He was in Vermont in August, and, I think, the first of September, and returned to Boston the first of September, I think.

Int. 5. Where was he in Vermont?

Ans. A part of the time in Vershire, and part of the time in West Fairlee.

Int. 6. How did you know that he was in Vermont?

Ans. I was there with him.

Int. 7. Do you know Ethan N. Coburn?

Ans. I do.

Int. 8. Do you know where he was at this time?

Ans. At Post Mills, Thetford, Vermont.

Int. 9. State whether or not, while you were in Vermont, at this time, you saw your brother make a drawing of a camera; and, if so, what he said in relation to it, if anything.

Ans. I saw him penciling a drawing which he said he was going to take to Coburn to have a camera made.

Int. 10. How do you fix the time that you were in Vermont as August, 1846?

Ans. The most definite method I have is, from a letter I have in my possession written from there, dated August 22, 1846. I was making pictures there; took a daguerreotype apparatus with me, and spent a longer time than usual there; and from pictures that I made of some of my friends there at that time I know definitely it was in 1846.

Int. 11. What, if anything, does the letter you speak of say about your brother's being there?

Ans. It says that he is in Vershire, and expected at West Fairlee.

Int. 12. Look at Exhibit A 1, now shown you, and state whether you have seen it before; and, if so, when and where you first saw the same.

Ans. I have seen it before, I think; I have certainly seen it before. I saw it at our room, on Tremont Row. I can't give the time when exactly; I think in the last of November, in 1846.

Int. 13. Do you remember in what manner it came to the rooms, whether with other articles or not?

Ans. It came with other cameras from Post Mills, made by
76 Coburn. I remember perfectly when it was unpacked; my
brother took it out.

Int. 14. Will you please look at Exhibit B 1 to B 5, inclusive, and state whether you have seen them before; and, if so, when and where?

Ans. I saw these, or articles very similar to them, at the rooms of Southworth & Hawes, I think, in 1847.

Int. 15. What is your opinion as to those being the same ones you saw?

Ans. I think they are the same.

Int. 16. What are those exhibits, and what were they used for?

Ans. They are parts of a camera used for making several heads on one plate.

Int. 17. Do you know of any particular instance when the instrument of which these exhibits were part was used; and, if so, state what they were?

Ans. They were used for making pictures of some school-girls, which I recollect particularly; and there were one or two single heads which were made nearly at the same time.

Int. 18. How frequently did you see it used?

Ans. It was often used to my knowledge; occasionally used, but not uniformly.

Int. 19. Is there any circumstance which enables you to recollect that pictures were taken with this machine last shown you, of which Exhibits B 1 to B 5 are parts, in the year 1847?

Ans. I think we made pictures with it in 1847 for the Mechanic Charitable Association Fair, held at that time.

Int. 20. And on what date was that fair held?

Ans. It was in the autumn of 1847.

Cross-examination:

Cross-int. 1. Will you swear positively what year it was that the Mechanic Charitable Association Fair was held in Boston, to which you have referred in your testimony?

Ans. Yes; it was in 1847.

77 Cross-int. 2. What makes you positive?

Ans. I was assisting in getting pictures ready for exhibition. In 1848 I was in Vermont at that period of the year.

Cross-int. 3. You assisted in getting pictures ready at other times and for different purposes and persons, did you not?

Ans. The preparations for getting pictures ready for the fair is different. I did assist in getting pictures ready at other times and for different purposes.

Cross-int. 4. Have you anything but what you have now stated to fix the time referred to in the last two questions and answers?

Ans. I don't think of anything now.

Cross-int. 5. Were you examined in the suit of Simon Wing vs. C. F. Richardson, in the United States court in equity, in Massachusetts, for the plaintiff therein?

Ans. I was.

Cross-int. 6. Did you not on your then cross-examination answer to cross-interrogatory 3, put to you as to the time you first saw Exhibits B 1 to B 5, as marked in this case, answer as follows to it: "There are no circumstances by which I can fix the date I first saw them positively, whether in 1846 or 1847," and that "I know these pictures were made before 1848, but there are no circumstances which enable me to fix the date beyond general recollection"?

Ans. I did.

Cross-int. 8. Did you not in said last-named examination answer to cross-interrogatory 6, which is as follows: "Were the instruments of which exhibits referred to (meaning Exhibits B 1 to B 5) were parts ever used in making pictures to the order of customers?" "I do not know"?

Ans. I did.

Cross-int. 9. Did you then in that answer answer truly as you then believed, or now believe?

Ans. I did.

Cross-int. 10. Did you not visit or be in Vermont with your brother Albert S. a number of times in the summer season between 1844 and 1849?

Ans. Only twice; once in 1846, and in 1840 we were sent for on account of my father's sickness, and both went up together.

78 Cross-int. 11. In your said examination in Wing vs. Richardson, did you not answer cross-interrogatory 6, in reference to your visiting Vermont, that you did not visit Vermont once in two or three years?

Ans. I did.

Cross-int. 12. In said last examination, to cross-interrogatory 8, and which is as follows: "Can you tell the year when you went to Vermont together?" did you not answer, "I cannot now tell"?

Ans. I did.

Cross-int. 13. In said last examination, in Wing vs. Richardson, to cross-interrogatory 9, which is as follows: "Was there anything peculiar in this visit made in 1846, of which you have testified?" did you not answer, "Nothing"?

Ans. I did.

Direct examination resumed:

Int. 1. Since you were examined in the case of Wing vs. Richardson have you had your attention particularly called to the dates of which you have been speaking; and, if so, on what occasion, and what measures did you take to verify those dates?

Ans. My attention was called to them a year ago last autumn, on occasion of giving testimony in a case; I don't remember the parties. I then examined our account-books thoroughly, and also looked up certain letters I had in my possession, and ascertained positively that I was in Vermont with my brother in 1846 and again in 1848; not in 1847 or 1849.

Cross-examination resumed:

Cross-int. 1. Was not your husband, Josiah J. Hawes, interested with your brother, Albert S. Southworth, in the Exhibits B 1 to B 5 and Exhibit A 1, mentioned herein, at the time, or subsequent, you say you first saw them? State the fact.

Ans. Not to my knowledge.

N. N. HAWES.

79 The U. S. Patent Office to all persons to whom these presents shall come, greeting:

This is to certify that the annexed is a true copy from the files of this office of the caveat of A. S. Southworth and Josiah J. Hawes, filed November 3, 1852, for "Stereoscope."

In testimony whereof I, J. M. Thacher, Acting Commissioner of Patents, have caused the seal of the Patent Office to be hereunto affixed this twenty-seventh day of March, in the year of our Lord one thousand eight hundred and seventy-four, and of the Independence of the United States the ninety-eighth.

[L. S.] J. M. THACHER,
Acting Commissioner.

Caveat.

To the Commissioner of Patents:

The petition of A. S. Southworth and Josiah J. Hawes, of Boston, county of Suffolk, and State of Massachusetts, respectfully represents that they have made certain improvements in the lenticular stereoscope of Brewster and the reflector stereoscope of Wheatstone; and that they are now engaged in making experiments for the purpose of perfecting the same preparatory to applying for letters patent therefor.

They therefore pray that the subjoined description of their invention may be filed as a caveat in the confidential archives of the Patent Office, agreeably to the provisions of the act of Congress in that case made and provided, they having paid twenty dollars into the Treasury of the United States, and otherwise complied with the requirements of said act.

ALBERT S. SOUTHWORTH.
JOSIAH J. HAWES.

BOSTON, *Nov.* 1, 1852.

Our improvement consists in giving to the pictures of the stereoscope a panoramic motion into and out of the field of vision by 80 means of machinery adapted to the purpose, which we verily believe has never been accomplished before, they having been heretofore put in and taken out by hand as changes were required to be made: The means which we adopt for this purpose are described as follows:

Fig. 1 is a front elevation of a reflector stereoscope.

Fig. 2 is a plan of the lower box, A, B, C, D, of Fig. 1, which contains the machinery for moving the stereoscopic pictures.

Fig. 3 is a plan of the whole machine with the top E, F, removed.

Fig. 5, a transverse section upon the line 1–1 of Figs. 1 and 2.

Figs. 4 and 6, details which will be referred to hereafter.

The stereoscopic plates, with the glass by which they are covered, are firmly secured in metallic frames or otherwise, the whole forming a plate or frame of about $\frac{3}{8}$ths of an inch in thickness, as seen in plan at 1 to 30 of Fig. 3, and in side elevation in Figs. 5 and 6. In Fig. 3 Nos. 30 and 30^1 are represented as in the field of vision. G, H and I, are the mirrors, *b* the lens for magnifying the pictures.

Motion is given to the plates as follows: K is a crank attached to the shaft L, which carries four endless screws or worm-gears which lie immediately beneath and engage with the cogged-wheels c, c, c^1, c^1 secured to the shafts d, d, d^1, d^1, and by means of which the shafts d are caused revolve as the crank K is turned

Upon the shafts d, d^1, are secured cogged segments e, e^1, e^2, e^3, e^4, e^5, e^6, e^7, seen in elevation in Fig. 5 and enlarged in Fig. 4, the office of which is at certain periods of the revolution of the shafts d, d^1, to engage in the rack n, n^1, at the bottom of the stereoscopic plates (Figs. 5 and 6), and bring them into the position required. The worm-gear upon the shaft L is so arranged that the shafts d^1 d^1, with their cog-wheels, revolve in the direction indicated by the arrows upon the upper periphery of the cog-wheels e, e,^{1} and the shafts d, d, and their cog-wheels or segments revolve in the opposite direction, as indicated by the arrows upon the upper periphery of the cogged segments e^2, e^3. Upon the same shafts d, d^1, are secured toes or pins, g, g^1, g^2, g^3, which in revolving strike against the pins h, h^1 h^2, h^3, projecting from vertical rods i, i^2, i^3, i^6 (Figs. 2 and 5), by which means the latter are caused to make a partial revolution at stated periods, for a purpose to be hereafter

(Here follows diagram marked page 81.)

82 explained. The vertical rods i to i^7 are all secured by means of straps, boxes, or otherwise (Fig. 5), in grooves in the sides of the box (Fig. 3) they are all provided with fingers k, Figs. 3 and 5), which in one postition of the said rods are revolved into slight grooves made in the side of the box to receive them, as seen in red, Fig. 3. The rod i is connected by a strap m, or otherwise; to the rod i^4, so that whatever motion is given to one is communicated to the other; the same may be said of i^1 and i^2 one of i^5 and i^7. The cogged segments e, e^1, the gear-wheels c, c^1, the toes g, etc., are all secured to their carrying shafts by set-screws for purpose of adjustment.

OPERATION.

In Fig. 3 the stereoscopic plates or pictures 30, 30^1, are now in the field of vision, a, a, a^1, a^1. As the crank revolves, the toes g, g^1, g^2, g^3, having passed the pins h, h^1, h^2, h^3, upon the vertical rods i, i^2, i^3, i^6, the latter are left free to revolve when necessary. The cogged segments, e^3, e^4, which lie immediately beneath the plates 30 and 30^1, engage as they revolve with the racks upon the bottom of these plates, and drive them in the direction indicated by the red arrows. As the plates advance, they strike against the fingers k upon the upright rods i to i^7, and press them into their recesses in the side of the box, as seen in red in Fig. 3, revolving the rods i to i^7, upon which the fingers are placed.

The plates 30 and 30^1 then enter and occupy the spaces P P^1, at the same time the cogged segments e^2, e^5, immediately beneath the plates 29 and 29^1 drive them into the fields of vision a, a, a^1, a^1, recently occupied by 30, 30^1, and leaving the spaces vacated by 29, 29^1, empty. While these movements have been taking place, the plates 15 and 15^1 have been driven by the segments e^1 and e^6 immediately beneath them into the vacant spaces Q, Q^1, depressing the fingers k as before, and the plates 14 and 14^1 have been driven by the segments e and e^7 beneath them to occupy the spaces recently occupied by 15 and 15^1.

The toothed segments e to e^7, being so adjusted that they cease to engage the racks upon the bottom of the plates at the moment the
83 latter have reached the required position (Fig. 5). As the revo-
tion of the shafts d, d^1. continues, the toes g, g^1, g^2, g^3, strike the pins h, h^1, h^2, h^3, and give to all the rods i to i^7 a portion of a revolution, the fingers upon the rod i being projected out of their recesses and pressed against the plates, which are thrown forward, 28 and 28^1 entering the space recently occupied by 27 and 26^1; 13 and 13^1 taking the place recently occupied by 14 and 14^1, and the spaces P, P^1, and Q, Q^1 being again left vacant as represented in Fig. 3. And thus the motion of the plates continues, every revolution of the shafts d, d^1, bringing a new plate into the field of vision, carrying a new one into the spaces P, P^1, Q, Q^1, and advancing all the plates in the compartments R, R^1, a distance equal to the thickness of one plate.

What we intend to claim as as our invention, and desire to secure by letters patent, is—

1st. Giving to the pictures of a stereoscope, or other instrument of analogous character in which rigid pictures are viewed, a panoramic motion into and out of the field of vision by means of any appropriate machinery for the purposes herein described.

2d. The method herein described of producing the above-claimed panoramic motion.

ALBERT S. SOUTHWORTH.
JOSIAH J. HAWES.

BOSTON, *Nov.* 1, 1852.

The U. S. Patent Office to all persons to whom these presents shall come, greeting:

This is to certify that the annexed is a true copy from the files of this office.

In testimony whereof I, M. D. Leggett, Commissioner of Patents, have caused the seal of the Patent Office to be hereunto affixed, this twenty-seventh day of March, in the year of our Lord one thousand eight hundred and seventy-four, and of the Independence of the United States the ninety-eighth.

[L. S.]

M. D. LEGGETT,
Commissioner.

84 $20 cert.

SOUTHWORTH & HAWES.

HON. CHAS. MASON, *Com. of Patents:*

SIR: I have to transmit herewith certificate of deposit amount $20, which I respectfully request may be applied to the renewal of Messrs.

Southworth & Hawes' caveat for their stereoscope, the first term of which expired on the 3d instant.

Remaining very respectfully,

SAM. COOPER.

Boston, November 4, 1853.
Received and filed November 7, 1853.
App'd May 7, 1855.
Renewal of
Caveat.
No.
Southworth & Hawes,
Of Boston,
County of Suffolk,
State of Massachusetts.
Imp'ts in stereoscopes.
Received.
Petition.
Affidavit.
Specification.
Drawing.
Model.
1. Cert. dep. $20, Nov. 7, 1853.
Cash.
2. Examined.
Issue.
3. Patented , 185 .
Recorded vol. , page .

SAMUEL COOPER,
Boston, Mass.

85 COMPLAINANTS' EVIDENCE IN REBUTTAL.

The parties, being present by their respective counsel, on the 26th of October, 1875, made the following

Stipulation.

It is here stipulated by respective counsel that the testimony of Marcus Ormsbee, taken on the 25th of March, 1875, and that of Nicholas Pike, taken on the 25th of said March, in case of the same plaintiffs against Edward S. Dunshee, and the exhibits therein referred to, being pages 60 and 66, inclusive, of the printed "additional record" in that case, may be taken as part of the plaintiffs' proofs in this case, with the same effect as though taken in this case, without precluding either party from taking additional testimony of either of them.

JOHN G. STETSON, *Examiner.*

Deposition of Marcus Ormsbee.

NEW YORK, *March* 25, 1875.

Int. 1. Please give your name, age, and residence.

Ans. Marcus Ormsbee; age, sixty-three; residence, 52 Willough street, Brooklyn, New York.

Int. 2. Are you one of the plaintiffs in the above-entitled suit?

Ans. I am.

Int. 3. Were you acquainted with Philip Haas, who formerly resided in New York City?

Ans. I was.

Int. 4. Is said Haas now living?

Ans. He is not.

86 Int. 5. In what business was the said Haas engaged in New York?

Ans. In the daguerreotype business.

Int. 6. Please state whether you were in his place of business—I mean his daguerrean rooms—many years ago; and, if so, state when, to the best of your recollection.

Ans. I was in his daguerrean rooms in 1847.

Int. 7. For what purpose?

Ans. To inform myself whether or not the said Haas was using the multiplying shield or plate-holder for making four distinct pictures on one daguerrean plate without moving the shield or plate-holder.

Int. 8. Did you see Mr. Haas on that occasion?

Ans. I did not see Mr. Haas.

Int. 9. Did you see at that time any of his workmen or employés in that business? If yea, state the names of any that you remember.

Ans. I say two, one named Silas Selleck; the other name I do not remember.

Int. 10. Did you at that time see any specimens of pictures four on the same plate?

Ans. I did.

Int. 11. State whether said Selleck at that time explained to you the way or manner in which said pictures were made at that place; if yea, give as clearly and as fully as you can the description that he gave to you.

Ans. Yes, he did; it was to take two pictures on one end of the plate, then to go into a dark room and turn the plate end for end and take the other two pictures.

Int. 12. State whether you have had practical experience in taking daguerreotypes and photographs; if yea, to what extent?

Ans. I have had; to the extent of twenty-five or twenty-eight years.

Int. 13. State whether you are acquainted with the Southworth patent, so called, for multiplying-cameras, for infringing which this action is brought; and whether you are acquainted with the practical working of the said Southworth multiplying-cameras.

87 Ans. I feel myself thoroughly acquainted in the practice and use of the said Southworth multiplying-cameras.

Int. 14. In taking pictures in the manner described by the said Selleck as above, please state whether any one of the four pictures on the same plate could be taken in the focus or centre of the lens or field of the lens.

Ans. They were not.

Int. 15. Prior to the granting of the letters patent to the said Southworth, state whether you were in the rooms of other persons besides the said Haas who were engaged in the daguerrean business in New York City.

Ans. I was in several of the most prominent daguerreans'.

Int. 16. Please give the names of any that you now remember.

Ans. Mr. J. Gourney, M. B. Brady, Abram Bogardus, R. A. Lewis.

Int. 17. State whether you ever knew, or in any way heard, prior to date of the said Southworth letters patent, of any mode of making more than one picture on the same plate, having the centre of the picture in the centre of the lens, without removing the plate.

Ans. I never knew or heard of its being done except by Mr. Southworth himself.

Int. 18. Please examine the paper now shown to you, marked "Exhibit A," a true copy whereof, with same mark, Exhibit A, is hereto annexed, and state whether "M. B. Brady, 785 Broadway," is in the handwriting of said Brady.

Ans. It is.

Int. 19. Also state whether you are the person named in said exhibit as "Mr. M. Ormsbee."

Ans. I am.

Int. 20. Please also refer to "R. A. Lewis, 160 Chatham st." on said Exhibit A, and state in whose handwriting that phrase is.

Ans. In Mr. R. A. Lewis' own.

Int. 21. State whether the other signatures to said Exhibit A are genuine.

Ans. They are all genuine.

88 Int. 22. Was said Exhibit A signed by the persons whose names it bears before or after you became an owner in said Southworth patent?

Ans. After.

Int. 23. Please state whether said Brady received a license from you, as stated in said Exhibit A.

Ans. He did.

Int. 24. Also whether he paid any sum or royalty for the license; and, if yea, what, if you remember?

Ans. I do not remember the sum paid, but he paid a satisfactory royalty.

Int. 25. Please answer the last two interrogatories as applicable to said Lewis.

Ans. Same answer.

Int. 26. State whether M. B. Brady and R. A. Lewis, above named in your deposition, are still living.

Ans. They are.

Int. 27. In 1847 did you have any method for taking four pictures of the same person on one plate without removing the plate?

Ans. I did.

Int. 28. Please describe that method.

Ans. I take the common shield or plate-holder, put my plate in as usual; I then take my zinc slide, cutting one-fourth out, putting that in the shield over the plate; then take a whole piece of zinc, putting that over the plate and first zinc; then, getting the focus of the camera, I draw the outer or whole slide half way out, exposing one-quarter of the plate, then drawing the zinc cut slide, turning the cut slide, and inserting it so as to expose another quarter, and thus proceeding till the four pictures are taken.

Int. 29. Suppose a small or narrow perpendicular partition was inserted in the camera—I mean in the shield used in the camera—and four pictures taken on the same plate, two on one side first, and then two on the other side, without removing the plate, would the same result substantially be accomplished?

Ans. It would not.

Int. 30. In what respect would there be any difference?

Ans. They would substantially be the same, except *in* the first one described exposes more of the plate in each picture taken.

89 Int. 31. For what purpose or object did you visit daguerrean rooms in 1847, as hereinbefore stated?

Ans. For the purpose of learning if any person was making daguerreotypes after the method of my practice.

Int. 32. When you called at Haas' rooms and conversed with Selleck, as before stated, did you talk over with him your modes of taking four pictures on the same plate?

Ans. I did.

Int. 33. Suppose four pictures to be taken on the same plate in either of the two modes last above described, would either of said four pictures be taken in the focus, or centre of the field of the lens?

Ans. They would not be.

Int. 34. Did you at any time commence a suit against said Brady in the circuit court of the United States for the southern district of New York for an alleged infringement of the said Southworth patent?

Ans. I did.

Int. 35. Please examine again Exhibit A, a copy of which is annexed to this deposition, and state what "multiplying-cameras" or what kind of multiplying-cameras are referred to in Exhibit A.

Ans. They are cameras made under the Southworth patent.

Int. 36. Exhibit A appears to be without date; was the paper given before or after the termination of your said suit against said Brady?

Ans. After.

Int. 37. At the time when you sued said Brady did you own the right to the Southworth patent for the city of New York?

Ans. I did.

MARCUS ORMSBEE.

EXHIBIT A.

This is to certify that we have used for several years one of E. Corbett's and also John Stock & Co.'s, as well as other make of
90 multiplying-cameras, receiving the right of use by license issued to
us by Mr. M. Ormsbee.

CHAS. D. FREDERICKS & CO., 587 Broadway.
J. GOURNEY & SON, 707 Broadway.
M. B. BRADY, 785 Broadway.
GEO. G. ROCKWOOD, 839 Broadway.
LONDON STEREOSCOPIC CO.
JAMES S. WARNER, M'g'r, 579 Broadway.
ABRM. BOGARDUS, 363 Broadway, N. Y.
R. A. LEWIS, 160 Chatham street.

We have used multiplying-cameras of different makers, and have paid Mr. Ormsbee for the right to do so.

E. & H. T. ANTHONY & CO.
CRAFT & TERRY, 132 Bowery.

Deposition of Nicolas Pike.

NEW YORK, *March* 26, 1875.

Int. 1. Please give your name, age, and residence.

Ans. Nicolas Pike; fifty-five years of age; reside in the city of Brooklyn.

Int. 2. Are you the same Nicolas Pike who gave testimony in 1864 before Winslow Warren, jr., examiner, in the case of Simon Wing against Charles F. Richardson, then pending in the circuit court of the United States of the district of Massachusetts?

Ans. I am the same person.

Int. 3. Were you then acquainted with Philip Haas?

Ans. At that time I knew him very well.

Int. 4. Is he now living?

Ans. I believe he is dead.

Int. 5. Please state whether said Haas gave his deposition before said Winslow Warren in said case against Richardson about the same time you gave yours.

Ans. I think he did.

91 Int. 6. On the occasion of his giving his testimony, as above, did he produce as an exhibit to be filed a card or daguerreotype having on it four pictures of the same person?

Ans. He did.

Int. 7. Of what person was it a picture, as he represented?

Ans. Of his late wife.

Int. 8. Had his wife died previous to that time?

Ans. Yes.

Int. 9. Did he produce and file the original or a copy of said picture of his then late wife?

Ans. The original.

Int. 10. Please look at exhibit now shown to you, marked Exhibit B, and to be attached hereto, and state, if you know, what it is.

Ans. This is a photographic copy of the original daguerreotype put in as an exhibit by Haas as the original picture taken of his late deceased wife.

Int. 11. State whether Enos B. Foster, then of the city of Brooklyn, gave his testimony in said Richardson case, before said Warren, examiner, at or about the same time you gave yours.

Ans. He did.

Int. 12. In his testimony did he refer to or speak of a copy of the said picture of Haas' late wife?

Ans. He did, and exhibited the same.

Int. 13. Whether or not it was a copy of the same original testified to by said Haas?

Ans. It was.

Int. 14. Whether it was or was not similar to the copy hereto annexed, marked Exhibit B?

Ans. It was similar.

Int. 15. Did said Foster, in his testimony on that occasion, state who made the copy he testified about, and whether it was made from the original picture?

Ans. He stated that he himself made the copy from the original at the request of Haas himself.

NICOLAS PIKE.

92 *Deposition of George F. Waters.*

Direct examination by J. S. ABBOTT, Esq., of counsel for complainants:

BOSTON, *October* 26, 1875.

Int. 1. Please state your name, age, residence, and occupation.

Ans. George F. Waters; fifty-one; Newton, Mass.; dentist.

Int. 2. Where is your place of business?

Ans. No. 8 Beacon street, Boston.

Int. 3. Is your office now where it was during September, 1874?

Ans. Yes.

Int. 4. How long have you been engaged in the occupation of dentistry?

Ans. Twenty-seven years; I commenced practice in the fall of 1847.

Int. 5. What attention, if any, have you given to mechanics and inventions; have you ever obtained letters patent for inventions of your own?

Ans. I have always been interested in mechanics from my youth. I have received three letters patent of the United States for mechanical inventions and improvements.

Int. 6. I now place in your hands printed record of defendants' proof in the above-entitled case, and ask you to read carefully on pages 52 and 53, commencing with 12th direct question and ending with answer to cross-question 22, and then state whether you are the Dr. Waters there referred to.

Ans. I have read the portions of the record referred to, and am the Dr. Waters there spoken of.

Int. 7. Have you the picture—"2 pictures on the same plate"—referred to on said pages, particularly in answer to the 13th direct and 22d cross-question? If so, please produce the same, to be introduced and filed as an exhibit in this case.

Ans. I have, and produce it.

(The picture referred to is marked Exhibit 26, J. G. S., examiner, and now introduced into the case.)

(Here follow photographs marked page 93.)

94 Int. 8. Were you present when the picture was taken; if yea, state when and where it was taken, and for what purpose?

Ans. I was. It was taken in 1849, the first of the year, at 115 Court street, Boston, corner of Sudbury and Court streets, where my office then was, for the purpose of showing the great change by the introduction of this set of teeth, being a greater change in this case than usual. I wished to preserve the appearance at that time to see what the change would be as time progressed, she having lost a portion of the right superior maxillary, and the muscles of the face contracted on that side.

Int. 9. Who made the set of teeth referred to?

Ans. I did.

Int. 10. Please state, as fully and minutely as you can, how said two pictures were taken, and the kind of camera-box with which they were taken; I refer especially to whatever was done by said Thayer, as to the camera-box and any parts connected therewith, while taking the picture. If there was any conversation between you and said Thayer, at or about the time when they were taken, and before they were taken, please, first, in your answer, state that conversation as accurately as you can, giving the language used, if remembered, otherwise its substance.

(Last paragraph of the question objected to.)

Ans. I don't think I could recall the exact language used; but I recall the fact that he couldn't help me to what I wanted, until I had suggested the taking of the two pictures by swinging the camera. He first said it could not be done; and then he tried to see what could be done. His objection was that the plate being exposed to light for one picture would have the chemicals so changed that another picture could not be taken at the same time. I suggested to him that it was possible that only those portions of the chemicals receiving the image of the sitter

would be changed, provided he used a dark background, and had that out of focus. He seemed convinced, and proceeded to try it. I don't recall any more in regard to the conversation. There was something said in regard to the sitter, as to which picture should be taken first—the one with the teeth in the mouth, or the one with the teeth in
95 the hand. After we had settled with regard to the order to which
the pictures should be taken, he prepared his plate, and turning his camera-box (which was one of the cheap, ordinary affairs of the time, used by beginners, upon its side), he focussed the instrument, and then proceeded to take the first picture, with the teeth in the mouth: that being done, he covered the picture with the slide, withdrew it, and swung the camera, refocusing, and took the next picture—the teeth in the meanwhile having been transferred from the mouth to the hand. The operation proved successful; the pictures came out well.

Int. 11. In the first part of your last answer you say, "I recall the fact that he couldn't help me to what I wanted." And afterwards you say, "He first said it could not be done." Did you state to him what it was that you wanted; if so, what did you state to him? Give the language or the substance of it.

Ans. I told him I had just put in a set of teeth for a lady whose face had been much deformed by previous surgical treatment, and that the change was so great in her appearance I wished to have it contrasted on one plate if possible.

Int. 12. Now, referring to that part of your last answer but one, wherein you state, "He first said it could not be done," state what it was which he first said could not be done.

Ans. He said he couldn't have two pictures on one plate of the same person, because one picture would be obliterated while he was preparing the plate for the next.

Int. 13. State, as accurately as you can, the length of time occupied in taking upon the plate the impressions of these two pictures.

Ans. I should say it was within two minutes.

Int. 14. Please now read on page 51 of said record, commencing with the fourth question and ending with the ninth, and then state whether said Thayer, in taking said two pictures, or either of them, made use of either of the methods or processes there described.

Ans. He did not.

Int. 15. Have you any other specimen of two pictures taken upon the same plate? If yea, please produce the same, to be marked and filed as an exhibit in the case.

96 Ans. I have, and produce it.

(The picture produced is marked "Exhibit 17, J. G. S., examiner.")

Int. 16. State, if you know, when and by whom the pictures on Exhibit 17 were taken.

Ans. Taken in the first of the spring of 1849, by S. H. Lloyd, on Tremont street, corner of Pemberton square, over Rogers' shoe-store.

Int. 17. Were you present when taken?

Ans. I was.

Int. 18. At whose request and for what purpose were they taken?

Ans. Taken at my request, and for the purpose of showing the improvement made in a few months in the appearance of the face.

Int. 19. State in what way these two pictures were taken, as to the management of the camera-box and plate-holder.

Ans. Taken in the same way that the other one was.

Int. 20. What did said Thayer charge, or what did you pay, or what compensation make him for taking the pictures in Exhibit 16?

Ans. He didn't charge anything, and I didn't pay anything, but compensated him by showing the pictures and saying they were taken by him. I gave him the ideas about taking two pictures on one plate; he considered that compensation.

Cross-examination by counsel for defendant:

Cross-int. 21. Did Thayer take any other double pictures for you similar to Exhibit 16?

Ans. He did not.

Cross-int. 22. What, if any, practical experience have you in the use of photographic or daguerreotype materials?

Ans. None.

Direct examination resumed:

Int. 23. State, as to your knowledge, if any, touching the matter last enquired about, derived from observation of work by others, reading, and study.

97 Ans. I knew in regard to Daguerre's discovery—the action of light upon the chloride of silver solution, darkening it and making it insoluble. I have seen a great many pictures taken, and have always taken an interest in all the improvements made in photography.

GEO. F. WATERS.

Deposition of Simon Wing.

Direct examination by J. S. ABBOTT, Esq., of counsel for complainants.

BOSTON, *October* 26, 1875.

Int. 1. Are you one of the plaintiffs in this case?

Ans. I am.

Int. 2. Are you acquainted with Enos B. Foster, who has given testimony in this case?

Ans. I am.

Int. 3. Are you the person who was plaintiff in a case in equity against Charles F. Richardson, pending in the circuit court of the United States for the district of Massachusetts, in the year 1864?

A. I am.

Int. 4. Were you present when Philip Haas and Enos B. Foster testified at the time "additional testimony" was taken in that case?

Ans. I was.

Int. 5. State whether said Haas produced a picture of his wife at the time of his giving that testimony.

Ans. He did.

Int. 6. State whether said Foster produced, in connection with his testimony, a copy of that picture taken by himself.

Ans. He did.

Int, 7. Was that copy filed as an exhibit in the case against said Richardson?

Ans. It was.

Int. 8. Is said Haas living?

Ans. I think not; it is reported he is not.

(Here follow photographs marked page 98.)

99 Int. 9. Did said Haas testify in that case as to the time when

said picture of his wife was taken, and whether she was living; if yea' state when, and what he said on that subject?

Ans. He did. She was not living. I think he stated it was taken in 1847.

Int. 10. Please examine the printed record of the deposition of Nicholas Pike, being pages 65 and 66 in the printed "additional record," in the case of Simon Wing et al. v. Edward S. Dunshee, and then state whether you were present when that deposition was given.

Ans. I have examined the testimony of Mr. Pike, and was present when it was taken.

Int. 11. Did you see the exhibit marked Exhibit B, and attached to his deposition?

Ans. I did.

Int. 12. State, if you know, what that exhibit is.

Ans. It is a photographic copy of Mrs. Haas' daguerreotype.

Int. 13. Were you present when the testimony of Joseph H. Tompkins was taken in this case?

Ans. I was.

Int. 14. State whether you have seen "the original Exhibit 10" referred to in his third answer; and, if yea, where did you see it?

Ans. I have seen it; saw it in the clerk's office at Grand Rapids, Michigan?

Int. 15. Did said Tompkins send a "negative" as requested in cross-question 6; and have you seen that?

Ans. He did send a negative, and I have seen it.

Int. 16. Please examine Exhibit No. 18, now filed in this case, and state what it is.

Ans. I have examined Exhibit No. 18; they are photographic copies of the original daguerreotype I saw at the clerk's office in Michigan. The one on the left-hand side, also the one on the right-hand side, were printed from the negative referred to sent by Tompkins. The centre one is printed from the negative I made from the original daguerreotype at the time I saw it in the clerk's office.

160 Int. 17. Where did you make the negative referred to in your last answer?

Ans. I made it in my gallery at Grand Rapids.

Int. 18. What means have you of knowing whether you made it from the daguerreotype actually filed in the clerk's office at Grand Rapids?

Ans. The clerk went with me, and took the daguerreotype to the gallery. It was marked as an exhibit in the Tompkins case.

Int. 19. Are these pictures or Exhibit No. 18 of the same size as the one filed in the Tompkins case?

Ans. They are.

Int. 20. With what apparatus did you take these pictures?

Ans. I took the negative with a copying instrument manufactured by myself. I produced these pictures in the ordinary way of producing them from that negative.

Int. 21. In comparing the pictures taken from the negative sent by Tompkins with the central picture, I observed some dissimilarity; I refer particularly to an apparent enlarged roughness in the lower part of the right and left hand pictures, and also, in the same pictures, a lightish perpendicular mark which I do not discover in the central picture; do you know the cause of that dissimilarity? If so, state it.

Ans. The cause was from some scars or roughness in the original picture, which happened to it after I made my negative. The enlarged white mark at the margin was probably caused by the moving of the brass mat which was placed over the daguerreotype to keep the glass from touching it.

Int. 22. What practical experience have you had as a photographer?

Ans. Very extensive experience—commenced daguerreotyping in 1846, and have been in the different branches of the business ever since. The different branches would include photographing.

Int. 23. State whether the pictures on Exhibit No. 18 are exact fac similes of the negative to which you have referred?

Ans. They are, true copies.

Int. 24. I now put into the case Exhibit No. 19; please examine it, and state what each of the four pictures thereon is, and by whom made.

101 Ans. They are photographs made from an enlarged negative upside down. I made the negative at Grand Rapids at the same time I made the small one.

Int. 25. State whether each of these four pictures is a perfect enlarged copy of the corresponding picture of the negative referred to in the deposition of said Tompkins.

Ans. They are as perfect as they can be made with a negative wrong side up.

Int. 26. I repeat the question. I wish to know whether each of these four pictures is a perfect enlarged copy of the corresponding picture of the negative referred to by said Tompkins. If in any respect it is not a perfect copy, state wherein.

Ans. They are perfect copies of the corresponding pictures, with the exception of the indistinctness caused by printing them with a negative wrong side up. The glass the negative was made of being thick, the rays of light that passed through the coating or preparation the negative was made of distributes the rays and makes it indistinct.

Int. 27. I now put into the case Exhibit No. 20; please state what it is, and by whom made.

Ans. It is a solar photographic print made from the small negative that I took at Grand Rapids; made by R. A. Miller and myself.

Int. 28. Are the four pictures on this exhibit perfect enlarged copies of the corresponding four pictures on the negative referred to by said Tompkins? I mean, are they prefect enlarged pictures of the four pictures referred to by Tompkins as "Exhibit 10," filed in the clerk's office at Grand Rapids?

Ans. They are.

Int. 29. And is Exhibit 20 a perfect enlarged copy of said Exhibit 10, filed in said clerk's office?

Ans. It is.

Int. 30. Please refer to cross-question 83 and answer of William A. Pratt in this case, and then state whether you have seen the negative sent to me pursuant to said question and answer.

Ans. I have examined question and answer, and have seen the negative.

102 Int. 31. I now put into the case Exhibit No. 21; please state what it is.

Ans. It is a true photographic copy of the negative Mr. Pratt sent to his mother. I refer to the negative mentioned in my last answer.

Int. 32. I now put into the case Exhibit No. 22. Please state what it is, and by whom made.

Ans. It is a photograph of a background, showing the full extent of the field of the lens, made by myself.

(Here follows photograph marked page 103.)

Int. 33. I now put into the case Exhibit No. 23; what are the four pictures near the four corners of this Exhibit, being numbered 1, 2, 3, and 4, respectively; and by whom made, and from what?

Ans. They are four photographs made from the small negative I took in Grand Rapids of Exhibit No. 10 in the Tompkins case; made by myself.

Int. 34. What are the four pictures on the exhibit of a woman, and by whom were they made, and from what?

Ans. They are four photographs from the negative sent by Mr. Pratt, of his mother, referred to before; made by myself.

Int. 35. What is the central picture marked E, and by whom made?

Ans. It is a photograph duplicated from Exhibit 22; made by myself.

Int. 36. In making of the last-named picture E, state the relation or position of the centre of the picture as compared with the focus, or focal axis of the lens.

Ans. The centre of the Exhibit E was directly behind the centre of the lens.

Int. 37. State whether the four pictures of the boy and the four pictures of the woman on this exhibit are exact copies of the corresponding pictures on the negatives you have referred to.

Ans. They are.

Int. 38. I now put into the case Exhibit No. 24; state what it is, by whom taken, and in what manner.

Ans. They are photographs taken of a plaster of Paris figure, made
with the same lens as Exhibit No. 22; also the centre of Exhibit
104 No. 23, marked E, showing the falling off of the light, and the
indistinctness of the image towards the outer edge; also the different sizes of the parts of the image nearest the centre of the field of the lens, and the parts farthest from the centre of the field of the lens. It was taken by myself, by swinging and tipping the camera-box so as to bring the image in each quarter of the circle or field of the lens.

Int. 39. Was each of the pictures on this exhibit—I mean picture Figure "1" and picture Figure "2"—taken in the manner you have described?

Ans. They were.

Adjourned.

BOSTON, *Oct.* 27, 1875.

Int. 40. Do you know of any mode by which pictures were taken more than one on the same plate, and without removing the plate-holder from the camera-box, before the date of the Southworth letters patent?

Ans. I do.

Int. 41. Describe such method or methods.

Ans. The method of making two on a plate was by drawing two slides. First uncovering one-half of the plate by drawing one slide, then swinging the box so as to bring the image on the other half of the plate after inserting the first slide, then draw the second slide and exposing the second half.

The process of making four on a plate is by using four slides, by tipping and swinging the camera to bring the image on the four quarters of the plate.

Int. 42. Please examine Exhibit No. 24, and describe step by step just how you made the picture on that exhibit, which is numbered "2."

Ans. I have examined that portion of Exhibit No. 24 marked "2."

I first arranged my plaster of Paris image in a perpendicular position; then arranged my camera and lens so the camera was sitting level; then focused the image first on the centre of the ground glass; then moved the back end of my camera to the right, so it brought the image on the ground glass at the left of the centre of the ground glass, and 105 made a pencil mark on the camera-stand on each side of the camera-box, so that I could place my camera there without refocusing; then I swung the back end of the camera to the left, so as to bring the image on the right-hand side of the centre of the ground glass, and marked around the box again on the top of the camera-stand with my pencil; then dropped the back end of my camera-stand so it brought the image above the centre of the mark on the ground glass, there being two pencil marks across the ground glsss, horizontally and perpendicularly across the centre of the object glass; then fixed a point where the camera then set, so I could readily put the camera back in that place again. Next I tipped the camera-stand top up so the image fell below the horizontal line on the ground glass, and arranged a block to hold it there, while I made one impression in one quarter of the circle or field of the lens; then I proceeded to draw the slides, and expose each image without taking the shield from the camera, merely placing the box and camera-stand top in those pencil marks and points I have mentioned before.

Int. 43. When pictures were taken in either of the modes referred to in your last answer but one, would either of the pictures be taken in the centre or best part of the field of the lens?

Ans. They would not.

Int. 44. In taking pictures, four on the same plate, by the method patented by said Southworth, how would the centre of each of the four pictures be in relation to the axis or axial centre of the lens?

Ans. The centre of each picture would be in the axial centre, directly back of the centre of the lens.

Int. 45. Suppose four pictures to be taken on the same plate, in accordance with the Southworth patent, how would they compare with one another as to similarity or dissimilarity?

Ans. They would be exactly alike.

Int. 46. Have you examined carefully the pictures of said Pratt's son, referred to in said Pratt's testimony and in the testimony of said Tompkins, as to their similarity or dissimilarity?

Ans. I have examined them carefully.

Int. 47. Have you also examined carefully, and for the same purpose, enlarged copies thereof made by you, some of which (Exhibits 19 106 and 20) are referred to in your testimony given yesterday, and others of which are in the hands of said Southworth, to be by him produced?

Ans. I have.

Int. 48. Upon such examination how do you find them to be in regard to similarity?

Ans. They are not alike.

Int. 49. How extensively have you made use of the device patented by said Southworth in taking pictures?

Ans. Very extensively; sometimes in ten galleries at the same time.

Int. 50. State whether after such examination and comparison of the four pictures of the Pratt boy, as you have described, whether they could have been taken with such apparatus and in such manner as said Pratt has described in his testimony in this case.

Ans. They could not have been taken with such apparatus; they were not taken with such apparatus. No, they could not have been taken in such manner as he described.

Int. 51. Have you carefully examined the pictures of Mrs. Pratt, already referred to, and shown on Exhibits No. 21 and 23, in relation to their similarity?

Ans. I have.

Int. 52. State whether, in your opinion, these pictures could have been made with such apparatus and in such manner as stated in said Pratt's testimony in this case.

Ans. They could not.

Int. 53. Have you carefully examined the pictures of Mrs. Haas, already referred to in your deposition, in relation to the same matter of their similarity or dissimilarity?

Ans. I have.

Int. 54. State whether you have made accurate copies thereof, and accurate enlarged copies, now in the hands of said Southworth.

Ans. I have.

Int. 55. And have you compared the pictures in these enlarged copies for the same purpose?

Ans. I have.

107 Int. 56. Have you examined the testimony of Enos B. Foster and Silas Selleck in this case?

Ans. I have.

Int. 57. Please state whether, judging from a comparison of the four pictures of Mrs. Haas on one plate, above referred to, and also as enlarged as above, whether the original pictures could have been taken with such apparatus or in such a manner as is described in the testimony of said Foster and of said Selleck?

Ans. I know they could not.

Int. 58. In the bill in this case and in the testimony reference is made to a case in equity wherein you were complainant and Charles F. Richardson respondent; is a certified copy of record now shown you and marked Complainant's Exhibit No. 25, and now filed in the case, a copy of the case referred to?

Ans. It is.

Int. 59. In the testimony in this case reference is made to the testimony of E. S. Dunshee; I now file a certified copy of record in the case, marked Exhibit No. 26, in equity, of the same complainants as in this case, and against Edward S. Dunshee; is said Dunshee, who was the defendant in the last-named case, the same person whose testimony is introduced into this case?

Ans. He is.

Int. 60. It appears that Charles H. Williamson testified in the said case of yourself against Richardson; is said Williamson living?

Ans. I hear he is not. When I took the testimony of said Pike, in March last, I intended to take the testimony of said Williamson, and I was told he was dead.

Adjourned.

Boston, *Nov.* 5, 1875.

Int. 61. In the various trials which have been had in different courts involving the validity of the said letters patent granted A. S. Southworth, please state whether there have ever been produced any exhibits containing four pictures, claimed to have been made with similar apparatus or in manner substantially like said patented device, excepting the pictures of the Pratt boy, of Mrs. Pratt, and of Mrs. Haas, introduced into this case, and excepting also pictures made with said patented device, and offered as such?

(Here follow photographs marked page 108.)

109 Ans. No; there never have been.

Int. 62. I now introduce into the case a bellows camera-box, with accompanying plate-holder and slides, marked Complainants' Exhibit No. 46, J. G. S., examiner; state, if you know, when and by whom the box and plate-holder were made.

Ans. I don't know when they were made; the name of the maker is stamped on the back part of the box, "New York;" the name is not legible, and I do not otherwise know the maker.

Int. 63. How long have you known this camera-box and plate-holder?

Ans. The plate-holder i have had in my possession ever since about the time daguerreotypes went out of use—about 1856. It was not made for the box, but fitted to it yesterday; the one belonging to the box being lost. I think I have had this box about ten years.

Int. 64. Have you carefully examined the testimony of George McKown, on defendants' printed record, pp. 93–95?

Ans. I have.

Int. 65. Using such apparatus as he in his testimony describes, and in the manner described by him, would it be possible to take two pictures of one object upon the same plate so that each picture should be visible and distinct from the other?

Ans. It would not be possible.

Int. 66. Who prepared or made the slides already referred to and introduced in connection with this plate-holder and camera-box?

Ans. I prepared and made them.

Int. 67. Are this camera-box and plate-holder, with the accompanying slides, such as or similar to the ones described by said McKown in his testimony; if in any respect they differ, state wherein?

Ans. They are similar.

Int. 68. Have you gone through with this camera-box and its accompanying apparatus, with the exact process described by said McKown in his testimony, for the purpose of producing two pictures upon the same plate?

Ans. I have.

110 Int. 69. If you have the result of that experiment please produce it, to be marked Complainants' Exhibit 47, J. G. S., ex'r.

Ans. I have, and now produce it, and it is marked accordingly.

Int. 70. Is all the apparatus connected with this camera-box put in so that with it any one accustomed to taking photographic pictures can readily determine whether it is possible to take two pictures on the same plate with such apparatus as McKown describes, and in the manner he describes, and have the pictures visible?

Ans. It is all in that is required to make two distinct pictures on one plate. The manner varies from his description, as the two impressions are neither made directly behind the middle of the lens if we produce two distinct pictures. It is also all in that he describes, but on trial it produces Exhibit 47, which are lapped one over the other.

Int. 71. It is evident that you do not understand my question, so I put it in a different form. Suppose I am a practical photographer, and that I wished to determine, by practical experiment, whether it is possible to take two visible and distinct pictures upon one plate with such apparatus as McKown describes, and in the manner he describes;

if I were to take the camera-box, plate-holder, and the other accompanying apparatus that you have just put in the case, should I have all that he describes; should I have all apparatus needful for one to have to make the experiment with?

Ans. You would.

Int. 72. I now put into the case Complainants' Exhibit No. 48, J. G. S., examiner; state, if you know, who made the pictures on this exhibit, and when.

Ans. I made them this morning.

Int. 73. With what camera and apparatus?

Ans. With Exhibit 46, adding the slide marked Complainants' Exhibit 49, J. G. S., examiner.

Int. 74. How did you proceed in taking the two pictures on Exhibit 48?

(Here follows photographs marked page 111.)

Ans. I placed in the plate-holder the two slides, one with aperture, marked 49, the other, marked 46, without aperture; then focused the
image on the ground glass to the left of the dot in the centre of
112 the ground glass, so that the perpendicular pencil mark would
come across the middle of the image; then I marked with a pencil on the carpet around the point of the camera-stand leg bearing on the carpet; then I swung the camera-stand, camera and all, to my left as I stand back of the camera, until I brought the image on to the perpendicular pencil mark on the ground glass to my right; then I marked around the point of the camera-stand leg where it bears on the carpet as before. Now I have my marks so I can readily change the position of the camera after exposing the one to my left, which I do first by drawing both slides half way out; then shoving slide marked 49 clear to the bottom of the plate-holder, and drawing slide marked 46, without aperture, out of the plate-holder; then I swing my camera and stand to the left into the pencil marks mentioned on the carpet, and expose the right-hand picture. In taking the pictures the camera was turned on its side.

Int. 75. In taking pictures on Exhibits Nos. 47 and 48, were the pictures taken from the same object?

Ans. They were.

Int. 76. Was either of the pictures on Exhibit 48 taken in the centre or best part of the field of the lens?

Ans. They were not.

Int. 77. Was each taken in the same part of the field of the lens, and in the same relation to the axis or optical axis as the other picture was?

Ans. One was made on one side of the centre and the other on the opposite side of the centre.

Int. 78. Referring to your 7th answer, please state whether in what you there stated about "two distinct pictures on one plate," and, "as the two impressions are neither made directly behind the middle of the lens if we produce two distinct pictures," you had in mind and referred to the pictures on Exhibit 48; if not, to what did you refer?

Ans. I did refer to the pictures on Exhibit 48.

Cross-examination by counsel for defendant:

Cross-int. 79. Please state more fully how extensive your ex-
113 perience has been in the art of daguerreotyping, photography, and
the production of pictures for stereoscopic purposes, and the use of the apparatuses and instruments employed in such occupation.

Ans. I commenced making daguerreotypes in 1846; worked at it until 1856, and occasionally have made daguerreotypes since that time. I have made daguerreotypes for the stereoscope, also photographs for the stereoscope; have made them on glass and iron plate to a considerable extent; have made them with apparatus of my own manufacture; also, apparatus manufactured by other manufacturers until the present time.

Cross-int. 80. Since 1856 have you been constantly or frequently employed in the use of apparatuses and instruments connected with photography, and are you now so occupied?

Ans. I am. I have been most of the time since 1856 employed in using instruments to make photographic pictures, and constantly employed since 1846 either in making pictures or making apparatus for making pictures with, with the exception of the few weeks when I have had vacations, or sickness, or something of that kind.

Cross-int. 81. Suppose four pictures of the same sitter, taken at the same time, with a sliding-plate, as described in the patent, and that the sitter should slightly change his position (as sitters often do), could you get a stereoscopic effect?

Ans. Yes; somewhat stereoscopic, if the sitter should move sufficiently so that you could observe some parts of the object which you did not see in the first view.

SIMON WING.

114 *Deposition of Albert S. Southworth.*

Direct examination by J. S. ABBOTT, Esq., of counsel for complainants.

BOSTON, *October* 28, 1875.

Int. 1. Please state pretty fully what practical experience you have had, and what knowledge acquired by reading and study, and otherwise, in relation to photography and any other branches or matters connected therewith.

Ans. From the winter of 1839 and 1840, to 1861, my time was devoted to it as a business, and as a practical operator, except about two years; since, as a business, perhaps occupying three or four years in all; and all the time since 1863, in a business connected with photographing, very intimately and particularly, viz, that of illustrating questioned handwriting, as an expert, by photographing and diagrams connected therewith. I have been familiar with the publications on the subject, both American and foreign; and have zealously sought from the writings and experience of others, and from my own experiments continued through many years, to make myself familiar with all that was known respecting it and all I could possibly learn of it myself.

Int. 2. State whether you have testified as an expert touching the matters referred to in your last answer; and if yea, whether frequently, or otherwise.

Ans. I have, and very frequently for several years; a dozen or more.

Int. 3. In taking a photographic picture, please state in what part of the field of the lens the best or most nearly perfect picture can be taken; giving your reasons therefor, and referring, if it will make your answer more intelligible, to Plaintiffs' Exhibit No. 22, and to the Figure 5 on Plaintiffs' Exhibit No. 23; and if there are any other exhibits which will aid in this matter, you may refer to them.

Ans. In the centre or near the axis of the focus of the lens is the

best portion of the lens for use in making photographic portraits
115 and other pictures; because that portion of the lens gives the
most perfect figure or image of the object to be taken; there being less of spherical aberration and greater uniformity of light. Much departure from the axis of the lens elongates or distorts; and also the light diminishes so that it is soon lost in a penumbra or shadow. This loss of light is observable in Figure 5 of Plaintiffs' Exhibit 23, upon the outer edge of the circular picture; the centre E being that portion which is more perfect than toward the outer edge. A line drawn through the lenses at their centre, extending to the centre of the object to be pictured, should likewise touch the centre of the plate upon which the object is pictured; and such arrangement permits the instrument to stand on a level in relation to the object and the image to be formed on a level in relation to the lens and the object or objects pictured. Any removal of the objects and the lens from this centre line necessitates a change in the line of direction from the object to the lens and from the lens to the plate upon which the image rests causing the light to fall diagonally upon the lens and to be refracted diagonally upon the plate; and the greater this diagonal refraction of the light through the lens, the greater the necessary spherical aberration of the picture.

Int. 4. Were you present when the testimony of William A. Pratt was taken in this case; and have you carefully examined the same, being pages 30 to 40 inclusive; and also the testimony of J. H. Tompkins, being pages 41 and 42 in the printed record in this case?

Ans. I was present, and have very carefully examined their testimony.

Int. 5. State whether you have carefully examined the exhibit containing four pictures of said Pratt's son, introduced in connection with his testimony, and enlarged copies thereof, and have made investigations and experiments touching the same.

Ans. I have.

Int. 6. Suppose four pictures of the same object were to be taken on one plate, with the device patented by you and described in your reissue patent in this case, and taken in accordance with said letters patent; in what portion of the field of the lens would each of the four pictures be taken?

116 Ans. They would be taken in the axis of the focus of the lens,
using its most perfect portion; and each would be taken in precisely the same portion as the others.

Int. 7. State whether or not the four pictures so taken would be exactly alike.

Ans. They would be.

Int. 8. What knowledge, practical or otherwise, have you touching the stereoscope and of stereoscopic pictures?

Ans. I commenced experimenting with the stereoscope in the spring of 1851, and carried the science of taking stereoscopic pictures in connection with my partner beyond what had been published by Wheatstone and Sir David Brewster; and we made improvements which are admitted by scientific opticians and mathematicians to be the only correct and mathematical manner of taking them.

Int. 9. I now introduce into the case sixteen exhibits, each marked on the back, "Complainants' Exhibit No. 27, J. G. S., examiner"; also an exhibit marked "Complainants' Exhibit No. 28, J. G. S., examiner"; please state what Exhibit No. 28 is.

Ans. It is a photograph of the Pratt boy, from the original daguerreotype, four on the same plate, numbered in the upper right-hand corner, 1; the upper left-hand corner, 2; lower right hand-corner, 3; lower left-hand corner, 4.

Int. 10. Please explain the above-named sixteen exhibits; I mean, please state what they are, and how they compare with the pictures on Exhibit No. 28.

Ans. Each of these sixteen exhibits marked Complainants' Exhibit No. 27, in their respective numbers, 1, 2, 3, and 4, are from the same negative—from the same original as each of the same numbers 1, 2, 3, and 4 on Complainants' Exhibit No. 28, being all the changes of the same four numbers, mounted as stereographs, to be used in the stereoscope.

Int. 11. Suppose you had a card with two pictures upon it arranged for the stereoscope, taken in accordance with your said patented device; that is, two pictures exactly alike, of the same object; would you obtain any stereoscopic effect by placing such card in a stereoscope?

117 Ans. You would not.

Int. 12. Can it be determined by the use of the sixteen exhibits marked Complainants' Exhibit No. 27, in connection with the stereoscope, whether the exhibit of the Pratt boy, above referred to, and introduced by said Pratt, or rather whether the pictures on that exhibit could have been made in the manner he testifies?

Ans. It can.

Int. 13. If you have made such use or examination of these sixteen exhibits, please state as clearly as you can the mode or manner of such examination, and the result, and whatever connected with such examination tends to show whether said Pratt's testimony as to the manner in which he said the pictures of his son we made, on defendants' said Exhibit No. 10, could have been true.

Ans. Stereoscopic effect is seen in the Exhibits 27, when any of the different numbers as 1 and 2, and 1 and 3, or 2 and 3, are placed side by side as ordinarily mounted for the stereoscope; but when two of the same number as 2 and 2, or 3 and 3, are so mounted, no stereoscopic effect exists more than can be seen by viewing a single number or one picture singly. The stereoscopic effect produced by the stereographs having different numbers of Exhibit 27 show distortion and exaggeration as to proportions, because the movement was not the proper one for the stereoscope to exhibit the proportions of each as a whole and in detail properly. This distortion, or disproportionate extension of parts, is apparent in a greater or less degree in each of these stereographs, except those having the same numbers. Parts of the figure or portions advance in some, and are depressed in others, appearing sometimes convex and sometimes concave. Upon one stereograph an arm may extend; upon another the same may retreat; upon one the head advances from the shoulder or neck, upon another it retires; any relief or depression positively and necessarily betrays a variation of the point of view. This variation is caused in the manner of taking these four different pictures, which was, to swing the rear of the camera from side to side, and also to raise or lower the rear of the camera. The manner of taking these four pictures of the Pratt boy (Defendants' Exhibit No. 10) may be illustrated
by Complainants' Exhibit No. 19, where the pictures marked
118 No. 1, 2, 3 and 4, also marked Figures 1, 2, 3, and 4, may represent
the sitter for each number. Let Complainants' Exhibit No. 28 be placed top downwards; the light passing from the sitter, from No. 1, on Complainants' Exhibit 19, through the lens and camera, and forming the image, No. 1, on Complainants' Exhibit No. 28, the circle of view

of which the sitter for No. 1 represents but one quadrant on Exhibit 19, reflects the light but from one quadrant, the upper left; the lens is pointed to the centre of the circle of that point of view; its image, No. 1, is made upon but one quadrant of the focus of the lens. The next picture, No. 2, is made from the sitter in the upper right-hand quadrant of the field of view, the light passing diagonally through the lens, and forming the image for picture No. 2. Picture No. 3 is made from the No. 3, representing the sitter, from the lower left quadrant of the circle of view. The picture No. 4, likewise, is made from the sitter in the lower right quadrant of the circle of view, marked sitter No. 4.

We thus have for each of these four pictures four different circles of view, each varying the width and the length of the object pictured. In each case the lens is pointed to one angle of the circle of view, and each number varies from side to side, or upward and downward, as may be. This Defendants' Exhibit No. 10 is made having the camera pointed as just described, with the axis of the lens arranged so that its centre, or the focal axis, is nearly in the centre of the plate. This fact is shown, not only by the stereoscope, but by spherical aberration; the same parts of the upper pictures, Nos. 1 and 2, being of different dimensions from the same parts in the lower ones, Nos. 3 and 4; likewise the shading off from the centre to the circumference or the extremity of the action of the light is perceptible upon the corners of the plate, being the lightest in the middle of the plate and shadowy in the outer extremities. This arrangement of the lens in relation to the axis of the field of view and the focus of the lens may be shown by measurements, by superposition, bisecting pictures of the same number, and of different numbers, and laying them as measures upon their duplicates, and upon the different numbers.

Int. 14. I now put into the case "Complainants' Exhibit 29,
119 J. G. S., examiner;" please state what it is, and by what device
or apparatus it was taken.

Ans. It is four pictures from life, taken by our patent device, each taken in the axis of the focus of the lens, each of the four being from one point of view, and each one as a whole and in detail as to its parts of the same dimensions as the others

Int. 15. I now put into the case two exhibits, each marked "Complainants' Exhibit No. 30, J. G. S., examiner." Please state what they are, and the relation they bear to the pictures on Complainants' Exhibit No. 29.

Ans. They are exact duplicates from the same negatives of 29, bisected for observation and demonstration of the correctness of the answer to the previous question, that they are alike in measurements.

Int. 16. I now put into the case "Complainants' Exhibit No. 31, J. G. S., examiner." Please state what it is.

Ans. It is a duplicate of 28, from the same negative.

Int. 17. I now put into the case two exhibits, each marked "Complainants' Exhibit No. 32, J. G. S., examiner." Please state what they are, and the relation they bear to Complainants' Exhibit No. 31.

Ans. Exhibit No. 32 is a duplicate from the same negative as 31, bisected for observations and measurements upon 31, so as to show the differences in the measurements of 1, 2, and 3 when placed upon No. 31.

Adjourned.

BOSTON, *October* 29, 1875.

Int. 18. I now put into the case eight exhibits, each marked Complainants' Exhibit No. 33, J. G. S., examiner, each exhibit having two pictures with numbers corresponding to the numbers on the pictures on Complainants' Exhibit No. 29; please state whether these several pictures on Exhibit No. 33 are exact copies of the pictures bearing corresponding numbers on Exhibit 29.

Ans. They are, being duplicates from the same negative.

Int. 19. Have you made trial of these exhibits with the stereoscope; if yea, with what result?

(Here follow photographs, marked page 120.)

121 Ans. I have; they are not stereoscopic at all, but simply appear in the stereoscope as a single picture on a plane.

Int. 20. I now put into the case exhibits marked Complainants' Exhibits Nos. 34 and 35, J. G. S., examiner; are the pictures on these exhibits similar to the pictures on Complainants' Exhibits No. 28 and 31?

Ans. They are, being duplicates from the same negative.

Int. 21. Who drew the lines which appear on said Exhibit No. 34; for what purpose were they drawn, and with what degree of care?

Ans. I drew them, for convenience in observations and measurements of the different pictures, with extreme care, so as to make the geometrical figures and angles the same in each.

Int. 22. Now, regarding the various exhibits to which you have referred, and the examinations and measurements you have made, state pretty fully the results, and what is shown thereby, bearing upon the question whether the pictures on Defendants' Exhibit No. 10, referred to by said Pratt, could have been made in the manner he testified.

Ans. In the picture of the Pratt boy, Exhibit 10, four views upon one plate, the light diminishes in a shadowy penumbra towards the corners of the plate and at the top and bottom; being strongest and defining the pictures and showing detail best nearest the adjacent corners in the centre of the plate. Much detail is represented in the upper pictures as to the dress, its folds and outlines upon the body near and below the waist, hands, and arms; the chair-arm, and the round supporting it, and the dress between the body and arm above the elbow, and the light from the background coming through under the arms. Details as to light and shadow in the folds of the coat, upon which the right arm rests, checks in the figure of pants, and their folds; the left-hand with glove upon it, and the lower buttons upon the dress. In the lower pictures no detail as to the waist of the dress and its folds, its lights and shadows under the arms next the waist, the glove and form of the left hand, and checks upon pants and chair-arm as to its outlines, is discoverable, and the forms are scarcely discernible, and often
122 lost entirely. This want of detail is a point distinct from the
polishing off of the corners of the plate, diagonally, and quite irregularly, darkening the corners as to the space rubbed off of corners or sides, and has nothing whatever to do with it, or with the chafing of the border placed between the plate and the glass to protect the picture. This want of uniformity in detail, this falling off as it were of the light upon the extremities of the plate, showing such differences in detail on the same portions of the four different pictures upon the four corners of the plate, is owing to the different positions of the plate in relation to the axis of the lens while each of the four pictures was being taken. This difference is also seen by comparing the light upon the hair, and the defined edges of outline and light in the background in the two lower pictures with the want of definition, less light and darker background in the upper pictures as to the hair, edges of outline of the head,

and background. The defining of the chair-arm in the upper left picture (as we view the plate) as to its edges, shape and carving is in very marked contrast with the same in the lower left picture, where it is veoy faintly outlined, also very faintly and partially outlined in the upper right picture. The spot of light over the chair, under the left arm, in the right upper picture, has also much less light than the same spot in the left picture. The glove in the left picture is also much the lightest.

The differences of light and shadow in the said Pratt boy pictures, as to the points gone over, are a necessity of the manner of placing the lens and camera in relation to the axis of the lens, towards the sitter or object, so as to take the different pictures upon the four different portions of the plate, or so as to have the image from the object fall upon one quadrant of the circular field of the lens; the four pictures upon each plate being taken upon the four quadrants of the circular field of the lens; thus making the adjacent four corners of the four pictures in the centre of the plate nearest to, or in the axis of, the field of the lens.

Inspection of said pictures of the Pratt boy shows the following differences in the four pictures upon the plate: The light under the
123 left arm in No. 1 is less in surface than the same light in No. 2, because the point of sight was farther to the left: The light does not show except a point under the right arm in No. 1; whilst it is plainly seen under the right arm of No. 2, because the point of view is carried farther to the right. Only a very small portion of light is seen under the left arm of No. 4, and none at all under the right arm and none under either arm in No. 3.

In Nos. 1 and 2 the hair shows more breadth than in Nos. 3 and 4,, because the point of sight is highest when arranging for Nos. 1 and 2, and lower for Nos. 3 and 4; so that 3 and 4 are seen under the chin more, and over the head not so far as 1 and 2.

From the centre of the second coat-button under the chin to where the collar background and coat meet on the left shoulder of Nos. 1 and 2, the distance is shortest as compared with Nos. 3 and 4.

These comparisons are noted as the pictures upon the plate appear to the eye, not considering that they are inverted or reversed.

Comparisons and measurements show that the pictures were made by raising and lowering the camera, and swinging it to the right and left. Any two of the four arranged for the stereoscope show relief as to parts, however arranged, as they may be in twelve different positions. Two pictures from the same point of view show no relief in the stereoscope except that of perspective; neither would they show difference in measurements from corresponding points; but in both respects would appear as duplicates from the same negative.

In viewing the different stereoscopic positions of the four pictures of the Pratt boy, the following effects are exhibited as to each position of any two of the four:

First position, 2 and 1. The collar, right shoulder, arm, forearm, and hand, right chair-arm, and right knee project; whilst the left chair-arm, knee, hand, forearm, arm, left shoulder, and head retreat. The light from the background under the left arm retreats.

Second position, 1 and 2. The head, left arm, forearm, hand, and left chair-arm, and left knee project; whilst the right arm, forearm, hand, and right chair-arm, and right knee recede.
124 The light from the background under the left arm advances.

Third position, 3 and 1. The head, neck, right arm, forearm, hand, right knee, and right chair-arm recede; whilst the collar, left forearm, left hand, knee, and chair-arm advance.

Fourth position, 1 and 3. The head, right arm, forearm, hand and knee, and right chair-arm advance disproportionately; whilst the collar and body recede.

Fifth position, 3 and 2. Head, neck, right arm, and hand retreat; whilst shoulders, collar, and chest advance.

Sixth position, 2 and 3. Head, right arm, forearm, hand, knee, and right chair-arm project disproportionately; whilst the body and left hand recede.

Seventh position, 1 and 4. The head, right arm, forearm, hand, knee, and right chair-arm advance; whilst the body, left arm, and left hand retreat.

Eighth position, 4 and 1. The head and neck, right arm, forearm, and hand recede; whilst the left hand and knee advance.

Ninth position, 2 and 4. The head, right arm, forearm, hand, and knee project; whilst the left arm and left hand recede.

Tenth position, 4 and 2. The head and right arm and hand retreat; the collar, chest, and left hand project.

Eleventh position, 3 and 4. The head and neck recede, and the collar projects, and right hand somewhat.

Twelfth position, 4 and 3. The collar and shoulders recede, and the head and neck project.

In No. 4 there is a change in the expression, necessarily causing a change in the lines of the face, and a slight movement of fingers; but the head rests the same as in Nos. 3 and 2; and there is no movement of figure, or change of body, or change in outline of head, neck, or shoulders, except that caused by movement of camera or lens, as may be shown by the laws of aberration of light; and these changes of outline are precisely what would occur by raising or lowering the camera and swinging it to right or left, and what would occur in no other way.

The four pictures of Pratt boy are not made through the same opening or diaphragm in front of the plate; as may be shown by
125 superposition. Measurements also show the differences in the
width of the diaphragms between those on the right and those on the left of the plate.

Measure from the extreme visible portion of the chair-arm under the left arm of No. 1, straight across horizontally to the edge of the white background on the opposite side. Measure on the same line across the opening of No. 2. The difference is more than one-sixteenth of an inch in the natural size. Measure from the outer edge of the light, as low as the outline of the left arm above the elbow is seen across in No. 1. The measure is the same as the first from the visible outline of the chair-arm across. Measure No. 2 in the same place, across. The difference is more than one-sixteenth of an inch in the width of the opening ing, or diaphragm. Measure across the opening of No. 3 from the visible edge of the opening on the right—the top of opening is the same as No. 1; No. 4 is narrower by more than one-sixteenth of an inch. Thus demonstrating the impossibility that the pictures on the right side of the plate were made through the same opening, or diaphragm, as those on the left side of the plate.

The picture of the chair-arm and round under it in No. 1, and the spot of light through, and the outline of the left arm into the shadow over the chair-arm show that the edge of the diaphragm was still farther towards the edge, and that it has been partially obliterated since the picture was made. Enough of the outline of the arm over and picture of chair-arm remains to show that the edge of the diaphragm was still farther towards the edge of the plate.

If the two numbers, 3 and 4, have the top edges of their white background superposed, the edges will not coincide, as they would necessarily do if but one diaphragm was used, nor will the top edges of Nos. 2 and 4 coincide, as they would if the two pictures were made through the same diaphragm.

Let any one of the four pictures be bisected, and superposed upon the others; corresponding parts will differ in length or breadth, or in both.

Complainants' Exhibit No. 34 represents the pictures of the Pratt boy with lines and angles drawn upon each similarly, from one founda-
tion line extended through the centre of the second coat but-
126 ton under the chin and the point where the white collar, coat,
and background on the left shoulder meet in each picture. The geometrical figure is intended to be identical on each. When made identical it will not be in contact with corresponding points in the different pictures, but will vary in many portions equal to one-sixteenth of an inch in the natural size. The causes of these variations are, first, differences in the points of sight in all the four Nos.; second, spherical aberration. In measuring from corresponding points in the pictures, some parts vary slightly, and some to the extent above stated, about one-sixteenth of an inch. The change of the point of view varies a flat portion of the object slightly, or not perceptibly; whilst it may vary an outline or projection widely. In picturing any portion of the object or circular view, spherical aberration varies from the centre of the field of view as we approach the extreme outer limit of the circle. The same objects in the same portions of the different parts of the circle of view having the same relations to the axis of the lens will not vary; whilst the ball in the centre of the view will be pictured smaller than those at the extreme outer limit, which may measure the same; so of any solid figures, as heads, &c. In the Pratt Boy Exhibit, this spherical aberration is readily measured and demonstrated by superposition.

Any similar arrangement of lines and angles, however drawn, if upon the same foundation line, will answer the same purposes, and no foundation line can be found that will permit of a similar figure over each picture that will coincide with corresponding points to any great extent, though all the lines and angles are identical as a geometrical figure.

Two pictures from different points of view, either to the right or left, or higher or lower, or with both variations embracing the same foreground generally, are required for the stereoscope to represent solidity by binocular vision. Should it happen that a small portion of one of them is obliterated or wanting it is supplied in the combination of the two views by an illusion in binocular vision. And oftentimes the portion given in but one, is carried by the surrounding parts of the other with that other, and appears to be in the same locality as the rest.

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Synopsis of the foregoing.

I. The shading off, or penumbra, on the outer portions or corners of the pictures of the Pratt boy is a necessary result when approaching the limit of the extent of the field of the lens in its focus, and the limit of the circle of view embraced by the lens of the objects from which light is reflected, so as wholly or partially to be delineated in its focus upon the ground glass or plate, according as the objects are situated in or near the centre of the circle of view, or towards its outline, farthest from the centre.

(In multiplying pictures by moving the plate over the axis of the field of the lens in its focus, the camera remaining stationary, no shading off, or penumbra, occasioned by picturing the extremities of the circle of the field of view, will be seen in one picture that will not be seen in another, all other things being and remaining the same.)

II. The different forms and outlines of the projecting portions in each of the different pictures of the Pratt exhibits show that they were taken from different points of view.

(In multiplying pictures, according to the patent, all outlines of objects, as a whole or in detail as to projecting portions, are the same in each.)

III. In the Pratt exhibits the different effects of spherical aberration can be measured in the corresponding portions of the different pictures, owing to the different distances of the corresponding portions of the object from the centre of the field of view embraced by the lens and the different positions these portions of the picture occupy in the focus of the field of the lens.

(In multiplying pictures, as described in the patent, the spherical aberration remains the same as to each picture.)

IV. In the Pratt exhibits the relief of stereoscopic effect is distinctly shown by arranging the different pictures belonging to each plate in pairs, for stereographs, and viewing them in the stereoscope. No relief is shown by thus arranging duplicates from the same negative picture.

(No stereoscopic relief is shown by arranging the different
128 pictures in pairs taken in the axis of the field of the lens, with the camera and lens stationary, and more than would be shown by arranging duplicates printed from the same negative picture.)

V. In the Pratt exhibits the sizes of the diaphragms through which the light is admitted upon the plate are not the same for all the pictures upon the plate; as may be seen by measuring the white background in each to the exposed edge, or extent of chemical action.

(In multiplying pictures, as described in the patent, the openings or diaphragms will be of the same length and breadth.)

VI. The uneven and different edges of the outline of the diaphragm, by irregular notches and corners made by cutting out different openings for the two pictures on the right and the two on the left are distinctly seen and demonstrated by superposing, edge to edge, the right and left openings of the Pratt Boy Exhibits.

(In multiplying pictures, as described in the patent above, any notching or unevenness, any irregularity of corners, or any peculiarity of horizontal, perpendicular, or diagonal lines in one will exist in all.)

VII. Any set of identical geometrical lines and angles drawn upon the same foundation line, extending over the surface of each of the four pictures of the Pratt boy, will not superpose its lines and angles upon corresponding points in the different pictures, except at or upon a portion of the foundation line, or upon portions nearly equally distant from the axis of the field of the lens.

(In multiplying pictures, as described in the patent, any corresponding identical set of geometrical lines and angles drawn upon the same foundation line upon any number of pictures taken, both lines, angles, and corresponding points in the pictures will superpose identically and perfectly.)

VIII. Any picture of the four on the Pratt Boy Exhibits when bisected in its length and breadth, will not superpose upon the corresponding parts of any other, generally, but will vary apparently.

(In pictures multiplied, as described in the patent, each one as a whole, and in parts, will superpose perfectly upon any other.)

129 Int. 23. Regarding the examination you have made of the exhibits containing pictures of the Pratt boy, as above stated, and the tests already described by you, please state whether it is possible that the pictures of that boy, on Defendants' Exhibit No. 10, could have been made as testified by said Pratt?

Ans. It is not possible that they could have been made as described by him.

Int. 24. State whether it would be possible to produce such pictures as are on the defendants' said Exhibit No. 10, as described by said Pratt, provided, while taking the pictures, there were movements or changes of position on the part of the Pratt boy.

Ans. It would not be possible with any movement practicable.

Int. 25. I now call your attention to the picture of Mrs. Pratt, shown on Complainants' Exhibits Nos. 21 and 23; please state whether you have made such examination of these pictures as to enable you to state whether the four on one plate or card could have been made in the manner said Pratt testified.

Ans. I have.

Int. 26. Will you now state whether they could have been made in the manner he testified?

Ans. They could not have been so made.

Int. 27. Have you known Philip Haas, formerly living or doing business in the city of New York?

Ans. I have.

Int. 28. Do you know Enos B. Foster, of Brooklyn, N. Y.? I refer to the same man who has given testimony in this case.

Ann. I do.

Int. 29. State whether said Haas and Foster gave testimony in the case of Simon Wing against Charles F. Richardson, then pending in the circuit court of the United States for the district of Massachusetts.

Ans. They did.

Int. 30. State whether said Haas produced the picture of his wife as an exhibit in that case.

130 Ans. He either produced the original daguerreotype, or copies of it, copied with the assistance of Foster. I think he showed the original to the commissioner, and also before the judge at the trial; but retained the original picture in his own possession as being a picture of his deceased wife, and very valuable.

Int. 31. Was a photographic copy of that picture filed as an exhibit in that case?

Ans. There was.

Int. 32. Was it a single picture; if not, how many were there on the same card or plate?

Ans. It was not a single picture. There were four upon the same card or plate.

Int. 33. I now put into the case exhibits marked Complainants' Exhibits No. 36 and 36*a*, J. G. S., examiner"; please state what they are.

Ans. Exhibit 36 is an enlarged photograhic copy which I made while Mr. Haas was attending the court, in his presence, with his permission, from the original picture, used and copied in the Richardson case, referred to as the picture of his wife; and Exhibit No. *36a* is a photographic copy of the same original picture taken by me at the same time, and of the same size as the original picture.

Int. 34. I now put into the case "Complainants' Exhibit No. 37, J. G. S., examiner," bisected for superposition upon No. 36; please state whether the pictures on this Exhibit No. 37 are exactly alike the pictures on No. 36.

Ans. They are, being duplicates from the same negative.

Int. 35. I now put into the case eight exhibits, each marked "Complainants' Exhibit No. 38, J. G. S., examiner," and each containing two pictures, with a figure or number under each picture. The pictures on Complainants' Exhibits Nos. 36 and 37 are also numbered. Please state whether the pictures on these last eight exhibits which bear the same number (as Figure 1 for example) are exactly like the picture bearing the corresponding number on Complainants' Exhibits Nos. 26 and 27.

Ans. They are, being copies from the same negative.

Int. 36. Were these last eight exhibits arranged for use in the stereoscope?

Ans. They were.

(Here follows photographs, marked page 131.)

Int. 37. Have you made examination of the pictures on these last-named eight exhibits with a stereoscope? If yea, state with what result, or how they appeared when examined with a stereoscope.

Ans. I have made examination and observations, and the different numbers and positions result as follows:

Haas's Exhibit—first position, 1 and 3. Head and dress under left wrist project; right hand, shoulders, and body recede; and chair advances.

Second position, 3 and 1. Head retreats; right hand, shoulder, and body advance; chair retreats.

Third position, 2 and 4. Head and right hand and dress beyond, against the chair, recede; the left hand, right shoulder, and chair advance.

Fourth position, 4 and 2. Head advances; left hand retreats; body advances from chair, which recedes away from it; the right hand advances.

Adjourned.

BOSTON, *November* 1, 1875.

Int. 38. Please refer to my 24th interrogatory and the answer thereto, and then state fully and particularly why it would not be possible to take the pictures of the Pratt boy shown on defendants' said Exhibit No. 10, in the manner described by said Pratt, though movements or changes of position on the part of the Pratt boy, were made; and if there are several reasons or tests, please state the same separately, fully, and distinctly; or, in other words, state whether it would be possible to take the four pictures on Defendants' Exhibit No. 10 without a change in the position of the lens by moving or swinging the end of the camera-box, and by a change or changes in the position of the Pratt boy; and if not possible, state the reasons as above enquired of.

Ans. The unequal light upon the body and dress of these four different pictures shows Nos. 1 and 2 were taken from a different point of view from Nos. 3 and 4, the dress in its detail not being apparent in 3 and 4 as in 1 and 2; and that 1 and 2 in the lower portions of
133 the dress were pictured nearer the focus of the lens than 3 or 4;
and that 3 and 4 in the lower portions of the dress extend from the central or best portion of the field of the lens towards the extent of the action of light, lessening into the shadowy penumbra. This same want of light is exhibited over the heads of 1 and 2 and at the right of No. 1. The right knee of No. 1, that is, the figure of the pants, is sharp and definite, showing that portion in focus. The left knee of No. 2 has the same sharpness; the left knee of No. 1 has the figure of the pants indistinct and blurry; the same is true of the right knee of No. 2. This point shows that the lens was centred near the lower right corner of No. 1; and also that it was centred at the lower left corner of No. 2. From each of these corners, diagonally, the figure and detail of the dress grow indistinct or out of focus; the the top of the chair against the lower edge of light under the left arm of No. 2, and the edge of the coat making the outline of the light is sharp in No. 2; blurry and a little indistinct in No. 1; which is very much further from the axis of the lens or centre of the field of view. The glove upon the left hand of No. 1 and the shadows between the fingers are indistinct; and much sharper or more definite in No. 2 than in No. 1, being nearer the axis of the lens or centre of the field of view. The heads in Nos. 3 and 4 are in their outlines as a whole and in detail in much better focus than the lower portion of the same figures, the heads being nearer the focus of the axis of the lens, while the lower portions of the figure are at the extremity or beyond the field of the lens.

In No. 1 the light under the left arm above the chair back is smaller than the same light in No. 2. In No. 1 it is indicated under the right arm, yet scarcely defined; in No. 2 it is distinctly shown and clearly outlined. The face in No. 1 is a little more directly toward us than in No. 2. The foreshortening of the left arm in No. 1 as the elbow goes away from the point of sight is a little more than the same in No. 2, where the elbow is approaching the point of sight; so that the distance upon the arm, and from the light under the arm, are greater in No. 2 than in No. 1. Other measurements of the dress, both upon Nos. 1 and 2, show that the body is slightly towards us in No. 1, and not quite as much so in No. 2. Comparing No. 1 with No. 3, from the up-
134 per line of the eyelids to the top of the head in No. 1, the dis-
tance is greater than in No. 3; so from the edge of the upper lip to the same point of that on the head; so from the second button below the collar to the top of the head; so from any point directly under the head down to the bottom of the figure as shown, compared with the same corresponding point in No. 3 to the top of the head. The same remarks apply when comparing Nos. 1 and 4; the same when comparing Nos. 2 and 3; the same when comparing Nos. 2 and 4. The head of No. 3 is turned in the slightest degree away from us, farther than in No. 4; and this difference is exaggerated in the cheeks by the effort of the sitter to smile, or look pleasant, in No. 4. This effort to smile has compressed the lips, and there is the slightest discernible action in the muscles of the neck, pressing the head harder against the head-rest; in other respects the anatomy of the figure remains very nearly or exactly the same, except, perhaps, a movement in the first and second fingers of the right hand; and there also is the slightest variation or

wavering of the first and second fingers of the right hand of No. 2, as compared with No. 1. In every other respect the chair and head-rest hold Nos. 1, 2, and 3 in the same position, apparently without movement of either, and the body of No. 4. I illustrate further by exhibits now put into the case and marked "Complainants' Exhibits Nos. 39 and 40, J. G. S., examiner;" Exhibit 40, to show by the line A and B, drawn through each of the numbers and through precisely the same points, below the collar, that there has been no change in the figure or body in either of the four numbers, except that occasioned by the change of expression in face of No. 4. Exhibit 39 has nine horizontal lines drawn across each feature, numbered figures 1 to 9, and seven lines drawn perpendicularly through each number, marked in small letters from *a* to *g*, forming, with the horizontal lines, parallelograms. The base line in each picture is figure 8, drawn through the upper eyelids of each picture; the perpendicular is the small letter *d*, drawn through the second button below the collar. From angles formed by these lines intersecting measurements may readily be made in comparing the pictures, and the result of these measurements will conform to the statements respecting distance previously made in this answer.

135 Int. 39. In reply to my 36th question you say substantially that the pictures of Mrs. Pratt could not have been taken in the manner that the defendants' witness, Pratt, has testified. Please refer to Complainants' Exhibits Nos. 21 and 23, and give your reasons for your opinion.

Ans. The two sets of pictures upon 21 are duplicates from the same negative. In Nos. 1*a* and 2*a* the waist of the dress is defined to the bottom of each picture, sharply, and there is no want of light; the circular figure in the necktie on the ribbon is likewise perfectly defined, as well as in the figure or border on the edge to its farthest extent. The lower portion has as much or more light than the same circular figure close to the neck. In Nos. 3*a* and 4*a* the same circular figures and border grow faint from the pin downward to the extremity, until nearly lost for want of light, this want of light being a kind of shadow or penumbra surrounds Nos. 3*a* and 4*a* at the bottom, and likewise No. 1*a*, and partially No. 2*a*, at the top. This want of light occasions in part the indistinctness at the bottom of 3*a* and 4*a*, while lack of sharpness of focus in the instrument is apparent also. Taking Exhibit No. 23 and the figures 1*a*, 2*a*, 3*a*, and 4*a*, and likewise figure 5, A, B, C, D, having E for the centre, we place figure 1*a*, as made in A, E, D; figure 2*a*, as made in A, E, C; figure 3*a*, as made in E, B, D; figure 4*a*, as made in E, B, C, the axis of the lens then pointing to E, the shadowy penumbra towards the outer portion of figure 5 represents the shadowy penumbra upon the top of figure 1*a* and 2*a*, and upon the bottom of 3*a* and 4*a*, and show that these four pictures are made in the four different quadrants of the focus of the lens upon the plate, none of them being made in the central or best portion of the field of the lens.

Int. 40. Please state whether the appearances of these pictures, or the peculiarities of them described in your last answer, would or could be produced if the pictures were taken in the manner said Pratt testified.

Ans. They would not be produced, and could not be produced, according to his description of their manner of taking.

Int. 41. Would these peculiarities or appearances be produced
136 if the pictures were taken as said Pratt testified, provided her position was changed while the pictures were being taken?

Ans. They could not be so produced by any change in the position of the sitter.

Int. 42. Suppose the pictures of the Pratt boy, and the pictures of Mrs. Pratt also, were taken by moving or swinging the back or rear part of the camera-box, and thus changing the relative position of the lens, so as to bring the picture of the sitter on each of the four quarters of the plate in the manner you have described in this deposition; please state whether or not such mode of taking the pictures would produce the appearances, variations, and discrepancies in these pictures which you have pointed out and described.

Ans. It would precisely produce them.

Int. 43. Please refer to Complainants' Exhibit, No. 24 and state what the pictures on it are, and in what manner taken, and how the pictures on this exhibit, numbered 1 and 2, compare with the pictures of the Pratt boy and Mrs. Pratt, already described.

Ans. Exhibit 24, Figure 2, is a picture of a plaster cast of a boy bearing a tray; taken according to my answer next previous, in allusion to Figure 5, Complainants' Exhibit No. 23. The upper right-hand figure is taken in A, E, D; the upper left in A, E, C; the lower right in E, B, D, and the lower left in E, B, C. The shadowy penumbra is seen in this Exhibit 24, surrounding it, and the lower portions of the two lower pictures blend off from the largest amount of light in the middle or centre or upper portions of these two, to the bottom, where the lower limbs and pedestal are nearly lost in the penumbra. The manner of taking these corresponds, in all their appearances and measurements, to the peculiarities described in my previous answers to the manner of taking the pictures of the Pratt boy and Mrs. Pratt, as described. These pictures, on Complainants' Exhibit No. 24, Figure 2, compare generally in their measurements and effects with the picture of the Pratt boy and Mrs. Pratt, already described.

Int. 44. Please describe the picture numbered on Complainants' Exhibit 24; please state what it is and how taken.

Ans. The pictures upon Complainants' Exhibits 24, No. 1, are
137 four pictures of the same plaster cast previously mentioned, and differ from Figure 2 only that they are taken with a large lens having a much larger field, and are mostly within the light admitted through the best portion of the lens, and show only in faint manner the blending off of the light into the penumbra in the two lower figures at the bottom.

Adjourned.

BOSTON, *November* 3, 1875.

Int. 45. I now put into the case "Complainants Exhibit No. 41, J. G. S., examiner;" please state what is, and what manner and with what apparatus each of the nine pictures thereon was taken.

Ans. Complainants' Exhibit No. 41 contains nine pictures from one negative, each taken separately by sliding a plate across the axis of the focus of the lens according to the Southworth patent, being pictures of the same plaster cast of the boy holding a tray, referred to in previous answers. They are exactly alike in their measurements.

Int. 46. I now put into the case "Complainants' Exhibit No. 42, J. G. S., examiner," please state what it is.

Ans. The Complainants' Exhibit 42 is a photograph, enlarged from a copy of the Haas picture of Mrs. Haas, alluded to in previous answers.

Int. 47. Please now refer to Complainants' Exhibits Nos. 36, 37, and 42, and state whether in your opinion the pictures of Mrs. Haas referred to in your 30th and 33d answers were taken or could have been taken with apparatus similar, or substantially similar, to your said patented device, and give the reasons for your opinion.

Ans. They could not have been so taken; that is, with the movement across the axis of the focus of the lens, and through a single diaphragm. The edges of the diaphragm enclosing the background of No. 1, in Exhibit 36, are similar in their notchings and irregularities to the same in No. 3; but the relation of this diaphragm to the lens is different in each, that is, Nos. 1 and 3; No. 1. being much the longest in its opening. The edges of the diaphragm enclosing the background to No. 2 and No. 4 have the same notchings and irregularities, but they
139 are entirely different from Nos. 1 and 3. The dissimilarity in the

(Here follows photograph, marked page 138.)

openings as to the length has the same general variation between 2 and 4 that exist between 1 and 3. There is a slight change in the point of view in making the two pictures 1 and 3, also in the position of the lens in relation to pictures 2 and 4; and the bisect of 1 applied upon 3, or of 2 applied upon 4, make the differences apparent, though small. This picture was made with a large lens, and the camera stood at a considerable distance from the sitter; the original picture is upon a plate about 2¾ by 3¼ inches; several such plates might stand in a usable portion of the field of the focus of the lens, and would vary but slightly; still would vary somewhat from a picture of the same size made precisely in the axis of the focus of the lens. The pictures upon Exhibit 36, Nos. 1 and 3, were made by raising or lowering the rear of the camera, so as to vary the image upon the ground glass in a position about one-half of the length of the plate upon which it was taken, or about an inch and a half. This movement of the rear of a camera, having so large a lens and so long a focus, would vary the centre of the lens or point of view only in a slight degree; the same remarks apply to Nos. 2 and 4 upon the same exhibit.

Int. 48. Prior to the time when you commenced making experiments which resulted in your patented device, did you know of pictures being taken, more than one on the same plate, in the manner in which you have stated the pictures of the Pratt boy must have been taken?

Ans. I did know that they had been so taken, having done the same myself, though I do not now remember any instance as regards the doings of others in this respect. I should have no doubt but I had then known of their being so taken by others.

Int. 49. I now put into the case "Complainants' Exhibit No. 43, J. G. S., examiner;" please state what it is, and (if you know) state by whom, and when, and what manner the four pictures on this exhibit were taken.

Ans. Complainants' Exhibit No. 43 is a daguerreotype of four pictures of the sun, taken on the day of the great eclipse, in May, 1846. It was taken by myself on four different portions of the same plate, by swinging the camera from side to side in making two horizontal
140 pictures; then reversing the end of the plate in the frame or plate-holder, and making the other two horizontal pictures by the same movement of the camera from side to side.

Adjourned.

BOSTON, *November* 4, 1875.

Int. 50. Please state generally the processes or operations, chemical or not chemical, in making negatives for pictures, besides what you have already stated, which statements, as I understand them, include what is done with the camera-box and plate-holder.

Ans. Picture-making with the camera-box, including the lens and plate-holder was first upon silver plate, called daguerreotypes. The silver plate was perfectly polished, and likewise perfectly clean, and was taken into a dark room and exposed to the vapor of iodine, being laid over a box supported close to the edges of the plate; thus exposing the whole plate, except the edges or corners supporting the plate, to the vapor of iodine within the box. It was then laid into the frame which excluded the light entirely from the plate. After adjustments of the camera in relation to the object to be pictured, or person, the focus of the lens having been adjusted, the plate frame was placed in the camera, and the slide covering the frame withdrawn so as to admit the image in light from the object or sitter, to rest upon the iodized surface of the plate. After a proper time of exposure, the slide was returned into the plate-holder to exclude the light from the plate. The frame was removed to a dark closet, the plate taken from it and placed over or upon a mercury bath, resting upon its edges as over the iodine box; the quicksilver in the bottom of the bath being a little heated, filled the inside of the bath with fumes or vapor. This vapor of quicksilver coming in contact with the plate, adhered to the plate where the light from the light parts of the object or sitter had rested upon the iodized surface of the plate, and thus developed a picture of the object or sitter in proportion as the light acted from or was reflected from the more or less lighted portions of the object or sitter; when sufficiently developed, it was washed in hypo-sulphite of soda, dried off, and gilded with a solution of chloride of gold. The plate was then cased under glass, having usually a narrow mat or border of metal or paper between and close to the outer edges of the plate.

141 Int. 51. Please state whether the fumes or vapor or any of the operations or processes stated in your last answer could have produced the appearances in the pictures of the Pratt boy, or Mrs. Pratt, or of Mrs. Haas to which you have referred in this deposition as showing that the pictures could not have been taken with any device like or similar to your patented device; and give your reasons for the opinion you express.

Ans. They could not. The over or under coating of the iodine, over or under lighting, over or under developing over the mercury, accidents in handling the plate, bad washing, or any imperfections in the washing and gilding, are each and all in their perfect or imperfect effects upon the plate easily distinguishable by an experienced and competent observer, from the appearances which the changes in the position of the lens and the rear of the camera holding the plate are made to produce.

Int. 52. In taking negatives for pictures, in what position upon the negatives are pictures taken in relation to the position of the object; I mean to inquire, whether the top or head of the object when pictured is at the top in the negative?

Ans. They are always taken inverted and reversed in the camera, and appear when removed and turned so as to be viewed naturally as the natural objects would appear to us (that is, in the same position) when viewed as reflected in a mirror or looking-glass.

Int. 53. Please refer to the following portions of your testimony in the printed record of this case, viz, cross-ints. 2 and 3 and answers on page 54, cross-ints. 28 to 32 and answers on page 59, and to the copy of the caveat "filed November 3, 1852," commencing on page 75, which I procured from the Patent Office by agreement, after your testimony was completed; and then state, as fully and exactly as you can, and with what degree of certainty or uncertainty you remember, the time when in relation to the filing of that caveat you had completed and constructed so as to use practically, and actually used, the device for which you obtained the patent referred to in the bill in this case.

Ans. I have examined the portions of the record referred to, and am
certain that I made and used a camera with plate-holder,
142 such as is described in question and answer cross-int. 2, as early
as July next preceding November, 1852.

Int. 54. And did you practically use such camera, and with it produce pictures in the manner described in your letters patent, as early as July, 1852?

Ans. I know I did, as early as July, 1852, previous to our applying for a caveat; and I think now, on reflection, that my first experiments with the same movement after my return from California, were in the summer of 1851.

Int. 55. From the time when Exhibit No. 7, described in your 13th answer on page 48 of the printed, record, was made, please state whether you ever abandoned your purpose to perfect and obtain a patent for a plate-holder for taking more pictures than one on the same plate, and each in exactly the same and best part of the field of the lens.

Ans. I never did at all.

Int. 56. I now call your attention to folio 4 of defendants' record in this case. Are you acquainted with the letters patent granted to Isaac Van Bunschoten, there referred to, and have you seen the model in the Patent Office connected with the application for said letters patent?

Ans. I am acquainted with said letters patent, and have examined the model in the Patent Office, and understand its principles and claims.

Int. 57. Please state whether that patented device is similar to your patented invention, or embraces the elements of yours, or could be used to accomplish the effect produced by yours.

Ans. It is not similar in principle, nor would it be practicable to use it to accomplish the same purpose.

Int. 58. Please describe briefly the effect designed to be accomplished by the device patented by Van Bunschoten; and state also (if you know) whether it proved to be practical and went into use.

Ans. The purpose of the instrument, according to the patent, seemed to be to match together pictures or views by sections. For practical purposes the instrument had no value, being an unwieldly, cumberous affair, and, as far as my knowledge extends, there were none and have
been none sold or used by any one.

143 Int. 59. Have you examined the testimony of Alexander Beck-
ers, Victor Piard, John Stock, John Vossardet and Augustus
Semmendinger on defendants' printed record, pp. 2–17?

Ans. I have.

Int. 60. Please refer to the description given by Beckers of the sliding plate-holder, which he states he first used in taking more pictures than one upon the same plate; and state whether by the use of such an instrument it would be possible to take pictures in the manner—each in the same and best part of the field of the lens—as taken by your patented device.

Ans. It would not be possible.

Int. 61. Have you carefully examined the testimony of James B. Sinsabaugh, on pp. 19–25 of the defendants' printed record?

Ans. I have.

Int. 62. State whether the apparatus described by him is similar to or contains the elements of your patented device; state whether it would be possible with the apparatus described by him to take two pictures on the same plate, and each in the centre or best part of the field of the lens.

Ans. It is not similar and does not contain such elements. It would not take even one picture in the best part of the field of the lens.

Int. 63. Have you carefully examined the testimony of Rodney H. Dewey, on pp. 25–29 of defendants' printed record?

Ans. I have.

Int. 64. Please examine fols. 106–109, and state whether by the use of a device as described by him it would be practicable to take pictures more than one on the same plate, and each in the centre or best part of the field of the lens.

Ans. Neither practicable nor possible.

Int. 65. Did you hear the testimony of Charles Thayer given in this case, and have you carefully examined the same on defendants' printed record, pp. 50–57?

Ans. I did hear the testimony, and have carefully examined the pages referred to.

144 Int. 66. Have you examined Complainants' Exhibit No. 16, being the same referred to by said Thayer in his testimony, folios 206–208, and folio 211, and also copy of same, being Complainants' Exhibit No. 45?

Ans. I have.

Int. 67. Would it be possible to take the pictures or the negative of them on Exhibit No. 16, in the manner described by said Thayer?

Ans. It would not as he has described his camera, it being arranged according to his answers to questions four and five on page 51 of the record.

Int. 68. Have you carefully examined the testimony of Arthur Cobden on pp. 80, 90, and 92?

Ans. I have.

Int. 69. Were you acquainted with Mr. Mayall, referred to in folios 355 and 356?

Ans. I was.

Int. 70. Where did he reside when you were acquainted with him?

Ans. Philadelphia.

Int. 71. State when (if you know) he moved from Philadelphia to London?

Ans. In the latter part of the year 1846.

Int. 72. Prior to that removal had he resided in Philadelphia for a long or a short period, or many or few years?

Ans. Certainly a few years, I can't say how many.

Int. 73. Have you carefully examined the testimony of George McKown on defendants' printed record, pp. 93–95?

Ans. I have.

Int. 74. With such an apparatus as he describes in that testimony, and used in the manner as described by him, would it be possible to take more pictures than one on the same plate, each in the centre or best part of the field of the lens?

Ans. As I understand his description, it would not.

Int. 75. Were you formerly acquainted with Meade & Bros., referred to by Christopher Schoonmaker, in defendants' printed record, fols 400 and 404–406?

145 Ans. I was.

Int. 76. Please state pretty fully your acquaintance and intimacy with photographers or with men engaged in taking daguerreotypes in New York and elsewhere, say for ten years prior to the date of your letters patent.

Ans. My very early attention to daguerreotyping, being one of the very first to enter upon its practice in this country, attracted the attention and interest of persons desirous of learning the art or of procuring apparatus to assist them in its practice. Very many persons came to us (I mean myself and partner) for instruction, and we made large purchases of lenses, ordering them from Europe, and sold hundreds of sets. We likewise manufactured cameras and chemicals to be used in the art. Our business necessarily brought us in contact, personally and by correspondence, with operators practising the art in all parts of the country. Our success as to the perfection of the art, or perhaps I should say its progress in its early days, was extensively known to the profession—I might say, perhaps, universally—as well as to the public; for through many years our work received the highest premiums as well as the highest encomiums. I should say that there was no individual in the country more conversant with those practising the art of daguerreotyping than myself.

Int. 77. During the period (I mean the ten years named in my last question), were you frequently in the rooms or galleries of men engaged in that business in New York and elsewhere, and, among others, the rooms or gallery of Meade Bros.?

Ans. I was; and in Meade Bros. gallery after they went to New York.

Int. 78. Prior to the date of your said letters patent, had you any knowledge or information of the existence of any apparatus such as is described by said Schoonmaker and E. B. Foster and Alexander Beckers in their testimony in this case, or any apparatus by which more pictures than one could be taken on the same plate, and each in the centre or best part of the field of the lens?

Ans. I had not.

Int. 79. If there had, in fact, been in existence such apparatus
146 as those witnesses described in their testimony, and used in the manner, and as publicly or openly as any one of them states, would you be likely to have known it?

Ans. I think I should have been very likely to have known it, having had agreements with some of them for exchange of information, improvements, and discoveries incident to our art.

Int. 80. Please refer to folio 521 of defendants' record, and then state whether it is true that "as perfect a picture can be made when the sitter is on an angle with the lens, as when sitting in front of the centre of the lens."

Ans. It is not true; and such a statement is an absurdity which would not be uttered by any one having the least knowledge of the science of optics or of mathematics.

Adjourned.

Boston, *November* 5, 1875.

Int. 81. In the various trials which have been had in different courts, involving the validity of your said letters patent, please state whether there have ever been produced any exhibits containing four pictures claimed to have been made with similar apparatus, or in manner substantially like your patented device, excepting the three touching which you have testified. I mean the pictures of the Pratt boy, of Mrs. Pratt, and of Mrs. Haas; and excepting also pictures made with your patented device, and offered as such.

Ans. There never have been.

Int. 85. Please state whether the pictures of the Pratt boy and of Mrs. Pratt and of Mrs. Hass on the various exhibits of complainants, referred to in your testimony, are reversed or not.

Ans. Except Exhibit No. 20, being the very large photograph of the Pratt boy, and Exhibit 42, being the very large photograph of Mrs. Haas, which are taken as we view the sitter naturally, they are all reversed—that is, they appear as we see the natural object reflected in the mirror, being copies of daguerreotypes, which were usually taken reversed.

No cross-examination.

ALBERT S. SOUTHWORTH.

147 *Deposition of Alvan Clark.*

BOSTON, Nov. 2, 1875.

Direct examination by J. S. ABBOTT, Esq., of counsel for complainants:

Int. 1. Please state your name, age, residence, and occupation.

Ans. Alvan Clark; 72 next March; Cambridgeport; telescope-maker.

Int. 2. Please state what experience and knowledge, practical or theoretical, you have had of photography and kindred branches.

Ans. I have had little experience in photographing, though some, but am familiar with the photographing camera, and understand the difference between an indifferent and a good instrument; am familiar with the optical rules for their construction and adjustment, and have made the instruments.

Int. 3. Please state what attention you have given to optics, and for how long a time.

Ans. I have from my youth read, studied, and for more than thirty years have been engaged in making astronomical telescopes. We have made some of the largest refracting telescopes that have ever been made; by we, I mean myself and my two sons. In connection with this, the dividing of circles, the construction and application of micrometers for measuring small distances, have necessarily been a portion of my study and business.

Int. 4. Please state, or in any way refer to, some of the largest and most valuable telescopes which you, in connection with your sons or otherwise, have constructed.

Ans. Twenty-six inches clear aperture, thirty-two feet focal distance, is the largest; it was made for the United States Naval Observatory at Washington, and is now in use there; and we have another unfinished instrument of the same size, ordered by Mr. L. J. McCormick, of Chicago. This instrument he intends donating, I believe, to some college in Virginia. I will further state, we have made several of 12 inches; one now we are making of 11⅞ inches, for the Austrian Government, to be mounted in their observatory at Vienna.

148 Int. 5. In order to make the best or most nearly perfect photo-

graphic picture, in what part of the field of the lens must it be taken?

Ans. Those objects or parts of objects throwing their light upon that part of the plate nearest the optical axis of the instrument would be considered the most fairly and perfectly represented. There the central ray is received upon the plate at right angles to its surface; as you recede from that the central ray is received with more or less obliquity upon the plate, and when you have receded far from the optical axis the obliquity becomes considerable. The plate is so foreshortened that the same object would measure differently from what it would if pictured near the centre of the plate. In consequence of that foreshortening of the plate, pictures are always considered better, when taken near or upon the central portions of the plate. Photographers always aim to so locate them.

Int. 6. Are you acquainted with the device patented by A. S. Southworth for taking photographic pictures, and with the manner of taking pictures by it?

Ans. I am.

Int. 7. Suppose four pictures to be taken by that patented device upon one plate; please state in what portion of the field of the lens each of the four pictures would be taken.

Ans. The operator can have his choice, and would naturally take the central portion of the field. Each picture would be taken in the same part of the field and with the same condition of light, the foreshortening of the plate, and all conditions necessary to make them exactly alike.

Int. 8. Have you examined the complainants' exhibits of the Pratt boy, so called? I refer particularly to Complainants' Exhibits Nos. 18, 19, 20, 23, 27, 28, 31, 32, 34, 35, 39, and 40.

Ans. All of them, to some extent. I have made a partial examination of them.

Int. 9. I now put into the case another exhibit of the Pratt boy, marked "Complainants' Exhibit No. 44, J. G. S., examiner." Have you examined the pictures of the Pratt boy on this exhibit; and, if so, with what degree of care?

Ans. I have examined it with considerable care.

149 Int. 10. Have you examined the complainants' exhibits containing the pictures of the Pratt boy, or any of them, to such extent that you can state whether they were severally taken in similar portions of the field of the lens?

Ans. I have.

Int. 11. Please now state whether they could have been so taken, giving your reasons, or your principal reasons, for your opinion.

Ans. They could not have been taken under the same conditions; the two uppermost pictures, Nos. 1 and 2, were taken from very nearly the same point of view; careful measurements show but little difference in the two pictures in consequence of the whole picture being confined to so small an area; but if we measure from the right eye of one picture to the right eye of the other, and compare it with the measure from the same point on the lowermost visible buttons of Nos. 1 and 2, we find the latter or distance between the buttons less than between the eyes; indicating that the axis of the instrument was at, or nearly at, the lower portions of these two pictures. The two pictures appear to be more separated at the upper part than at the lower part. If we apply the same measuring to the lower pictures, Nos. 3 and 4, we find a greater distance between them at the lower than the upper part of the

picture, which would indicate that they were taken upon the opposite side of the axis of the instrument from Nos. 1 and 2. I find the upper pictures, as stated, taken from very nearly the same point of view—the lower ones from a different point of view. Assuming that the upper pictures were first taken, the camera must have been moved downward and to the operator's right, to have produced the lower pictures. That this change in the point of view is not attributable to the turning of the head alone is manifest if we consider the bearing of a bright object like a buckle or button near the middle of the forefinger upon the finger itself: the distance between this object and the finger is greater in the lower pair than in the upper pair of pictures. This shows that the difference in the point of view between the upper pair and lower
pair includes the figure as well as the head of the boy; and
150 from which we must reasonably infer that the change was not
from the turning of the head, but the new position of the camera.
The unequal illumination in the backgrounds would show that part of the aperture of the instrument was obscured or cut off to some portions of the plate. For instance, in No. 4 the upper right-hand corner of the picture is highly luminous, while the corresponding or upper right-hand corner of Figure 1 is relatively dark. If we make a similar comparison on the other pair we see the case is the same; that the outer corners of them all show a darkening which proceeds from the cutting off of the aperture, in turning the camera to locate a picture at one side of the field, to save room on his plate for the other three.

Int. 12. Please examine Complainants' Exhibit No. 21, and give your opinion as to whether the four pictures thereon were severally taken in the same or similar portion of the field of the lens, and your reasons, or principal reasons, for your opinion.

Ans. The heads and figures are all in different positions, so that no comparison can be instituted between the heads and figures; but the dark shading along the bottom of the picture and again at the top would indicate that portions of the aperture had been cut off by tipping the instrument.

Int. 13. Have you examined complainants' exhibits of the pictures of Mr. Haas, of which Nos. 36 and 42 are a part? If so, please state whether in your opinion the four pictures on one plate were severally taken in the same or in a similar portion of the field of the lens? Give your reasons, or your principal reasons, for the opinion.

Ans. I have; 1 and 3 comprise a pair; 2 and 4 comprise the other pair. I have been informed they were taken by a large camera placed at a considerable distance. Careful measurements over different parts of either picture, compared with its companion, show that there could have been but very slight distortion from foreshortening of the plate, or any other cause; indeed, the focus is so long and the picture so small, the camera did not need to be turned so much to produce these pictures as we find to have been the case in the Pratt boy. The aperture was not cut off by tipping the camera. I find, however, between 2 and 4,
some evidence of the change in the point of view from which they
151 were taken. It consists in the difference of distance between the
lower line of the chair-back and the skirt of the lady's dress.
There is also an irregularity along the right-hand margin of 2 and 4, a notched or irregular edge of the diaphragm, that is not visible along the hand-hand edge of pictures 1 and 3; which would indicate that the two sets of pictures were not taken through the same diaphragm, as would needs be the case in the Southworth process.

Adjourned.

BOSTON, *November* 6, 1875.

Cross-examination by counsel for defendants:

Cross-int. 14. Please explain more fully what you mean by the statement in answer to the 5th question, "that the same object would measure differently."

Ans. If you were to rule a plain level surface into small squares of perfectly equal dimensions, and place it in front of the camera so that it should be perfectly parallel to the plate, in a good camera the squares in the picture would be equal as they are in the original drawing; but if you tip that drawing out of parallelism to the picture produced, the squares would be unequal; those farthest removed from the axis of the camera will measure largest, and that portion of the picture which is most remote from the axis.

Cross-int. 15. In which direction would the squares be unequal?

Ans. They would be more enlarged in the direction of the axis of the camera, though but little.

Cross-int. 16. I mean in what direction, whether vertical or horizontal, supposing the picture to be in a vertical plane.

Ans. If the picture and the plate were both vertical but more widely separated at one side than the other, the enlargement would be greatest on that side where the separation was greatest.

Cross-int, 17. Would there be any enlargement on the other side?

Ans. I am not confident.

Cross-int. 18. To what would the enlargement of which you have spoken be due?

Ans. Simply the foreshortening of the plate.

152 Cross-int. 19. Please explain fully what you understand by the term "foreshortening"?

Ans. Viewing an object obliquely.

Cross-int. 20. How, then, do you apply this term to the plate?

Ans. In photographing the central rays through the axis of the lens, they are received on the plate at right angles; and the plate at that point, viewed from the lens, would have no foreshortening. As you recede from the axis of the lens, every portion of the plate presents more or less obliquely to the lens, and to those portions most remote the obliquity is greatest, and they are more foreshortened to the lens, or would be to the human eye occupying the place of the lens.

Cross-int. 21. Would not, then, this foreshortening exist when the drawing and plate were parallel, as you first stated?

Ans. They do exist, both in the drawing and in the plate; hence the pictures of the squares are proportioned exactly to the original squares, when the plate and the drawing are perfectly parallel.

Cross-int. 22. What change in the direction of the rays between the lens and the plate is produced by inclining the drawing as you have before described?

Ans. There would be no change in the direction further than would be due to the change of the location of the drawing.

Cross-int. 23. In what sense, then, do you use the expression "foreshortening of the plate," in your answer to cross-question 18?

Ans. Simply as I would use the term applied to any object in nature; as I would to a yard-stick, when the centre of it is nearest the eye, we might say it is not foreshortened; but when one end of it is nearer the eye than any other part, it is foreshortened; though, strictly speaking, the yard-stick would be foreshortened each way from the centre; when the centre is the nearest point to the eye, those portions nearer the extremities would be more foreshortened than those midway between the centre and extremities.

Cross-int. 24. Suppose that on the vertical drawing spoken of by you, there was a vertical line twelve inches from the centre of the drawing. If this drawing were turned to an oblique position, as you have before described, would the image of this line on the plate be nearer to or further from the axis of the lens?

153 Ans. It would fall nearer to.

Cross-int. 25. Would the foreshortening be greater or less than if the plate and drawing were parallel?

Ans. The foreshortening would be increased horizontally; that is, the squares would occupy a smaller space, they would measure less from right to left than they would vertically, upon the picture taken.

Cross-int. 26. Am I to understand you as saying that the foreshortening increases as you approach the axis of the lens?

Ans. Increases as you recede from the axis of the lens.

Cross-int. 27. If two pictures were taken side by side on the same plate by so swinging the camera or shifting the lens as to throw them on the two parts of the plate, would it be possible by comparison and measurement to recognize the fact that they were so taken?

Ans. If the pictures were large enough to occupy any considerable portion of the field, it would be shown by my measurements that the camera was moved. If the pictures were small, so the camera-box might not have been turned but little to make room for the second picture, the turning of the camera would not be so clearly shown by comparing the dimensions of different parts of one picture with the other. If the front lens of the camera had kept its place perfectly in the turning, the point of view would remain the same; but the tipping of the plate would cause some small difference in the measures of one part of one picture with the same parts of the other. In order to maintain parallelism in that plate, after taking the first picture, as cameras and plate-holders are ordinarily constructed, the whole camera would have to be moved bodily, and the pictures taken from a new point of view; measures would then develop a considerable difference in the pictures.

Cross-int. 28. Is the original picture of the Pratt boy, in this case, of a size that permits of the tests of which you have spoken?

Ans. It is.

Cross-int. 29. Please explain fully the method of the comparison and measurement, and the principles upon which they are founded;
154 using, if you desire so to do, any pair of the Pratt boy pictures
that have been made exhibits in this case, in illustration of such method.

Ans. I have used in my comparisons the medium sized pictures, "Complainants' Exhibit 44." With careful measures I find the two upper pictures slightly different from each other; the two lower pictures very slightly differ from each other; but between the two upper and the two lower there is considerable difference. I have determined this mostly by the use of dividers, and have used tale and a marking point and a straight-edge. And although the difference between the two upper pictures is not large, if we take a measure embracing a larger space from a given point, an eye in one picture to the eye in another picture, and then measure from one of the lower buttons in one picture to the same button in the other picture, it will be found the distance between the eyes is greater than between the buttons.

Cross-int. 30. Do you consider this difference in measurement sufficient to convince you that the two pictures so measured were taken in the manner described in the 27th cross-question; that is, by swinging the camera or shifting the lens?

Ans. I should, in connection with other evidence.

Cross-int. 31. What other evidence have you derived from these two pictures themselves?

Ans. Different degrees of illumination in the same parts of the different backgrounds, indicating that the camera had been tipped so as to cut off a portion of the aperture in one picture, and tipped the other way so as to cut off the aperture on the other side, in such a manner that it should leave the same part of one plate much lighter than the same part of the other.

Cross-int. 32. Have you any other evidence derived from these two pictures?

Ans. I believe not.

Cross-int. 33. Does this darkening of the background that you have mentioned in your last answer but one exist in all the four pictures comprising Exhibit 44?

Ans. It does.

Cross-int. 34. Do you find it in picture No. 4 of said exhibit?

155 Ans. I do; the face is lighter in that picture throughout; the head particularly would indicate a little longer exposure in the camera and the background is lighter generally; but there is the same darkening in the lower left-hand corner, and increase of light at the right hand corner.

Cross-int. 35. Of what shape is the edge of this darkening in the corner of the various pictures of this exhibit?

Ans. The plate upon each of the corners where the darkening should be most conspicuous has been rubbed or wrought upon, so the darkening is lost sight of until we get some distance on to the plate; but still enough remains to show the fact that a portion of the aperture had been cut off.

Cross-int. 36. Is the darkening on any portion of said exhibit sufficiently defined for you to say what shape it is?

Ans. I should say no.

Cross-int. 37. To what are the well-defined shades on the corner of said exhibit due?

Ans. I am not able to say whether it was some dark object, and is really photographic in its origin, or whether it comes from some hand operation on the plate. I don't consider those very dark corners of any account, and my inquiry refers to parts within those boundaries.

Cross-int. 38. Referring to the latter portion *to* your 27th cross-question, commencing with the words, "in order to maintain," &c., would the movement of the camera bodily produce any effect that could not be equally produced by a movement of the object or sitter bodily?

Ans. My impression is, the moving of the sitter in a certain way might be made equivalent exactly to the movement of the camera. I don't feel prepared to reason it out to the full satisfaction of my own mind.

Cross-int. 39. Please examine and compare by measurement the pair of photographs now handed you, and marked for identification Morton, A, and state if after such examination and comparison you are of the opinion that they give evidence of having been taken with a camera
which was so moved as to get the pictures on the two parts
156 of the plate, the plate itself remaining unmoved in the holder.
In making such comparison and measurements, please proceed in the same manner as you have already testified you have done with the

Pratt Boy Exhibit; that is, by comparing the distances between the eyes and the buttons in the two pictures.

(Objected to as inadmissible on cross-examination.)

Ans. I find the lower portion of these pictures are wider than the top; there is evidence of slight change in the position of the head. The right-hand head upon the picture is facing more toward us than the left-hand. I should think they had been taken by moving the camera, though it would be more difficult to determine, being only two pictures—neither need occupy so large a proportion of the field as where four are taken upon one plate. I observe, however, here a cutting off of the light upon the lower right-hand corner of the right-hand picture, which is ordinarily an evidence of the tipping of the camera. It might have been produced by other means, possibly intentional and possibly accidental. The right-hand picture is marked 1, and the left hand 2.

Cross-int. 40. Please make the comparison and measurement between the eyes and the buttons, and state whether the distances are the same or different.

Ans. I have made them, and find the distance between the buttons greater than between the eyes.

Cross-int. 41. I repeat the 39th cross-question, changing the pair of photographs to the pair I now hand you, marked for identification, Exhibit Morton, B.

(Objected to same as cross-question 39.)

Ans. I have executed one measurement, that is, between the eyes of one picture and the other, and also between the lower button of one picture and the other, and find the distance between the eyes the same as the distance between the lower buttons, very nearly, if not exactly. I should think the camera had not been moved, but that the plate itself had been moved; and yet there being but two pictures, had the camera been of long focus and the sitter at a considerable distance, the camera might have been moved; and yet by the coarse means I have applied for measuring, the difference would not be apparent.

157 Direct examination resumed:

Int. 42. Please examine the last part of your answer to cross-int. 14, commencing with the words "those farthest," and including the remaining part of the answer; and state whether there is any error therein or correction you desire to make; if so, please make the correction.

Ans. Those squares in the picture lying to the right and left of the centre, provided the plate and the drawing are both kept vertical, will measure smaller in a horizontal direction; but they would retain nearly the same vertical dimensions.

So far as this answer would modify my answers to cross-ints. 15 and 16, they should be corrected.

ALVAN CLARK.

Deposition of James W. Black.

BOSTON, *November* 4, 1875.

Direct examination by J. S. ABBOTT, Esq., of counsel for complainants:

Int. 1. Please state your name, age, residence, and occupation.

Ans. James W. Black; fifty; Cambridge, Mass.; photographer.

Int. 2. How long have you been engaged in that business, and to what extent?

Ans. Twenty-five years and over, doing a large business.

Int. 3. Are you acquainted with the patented device of one of the complainants, A. S. Southworth, for taking more pictures than one upon the same plate?

Ans. I am.

Int. 4. State whether you have used it in your business, and generally to what extent.

Ans. I have. Two-thirds of our business in the number of our pictures were made by that device. What I mean to say is, if we made twelve pictures a day, eight would be made by his device.

158 Int. 5. In taking a picture, in what part of the field of the lens must it be taken in order to produce the best or most nearly perfect picture?

Ans. In the centre of the lens.

Int. 6. Suppose two pictures to be taken of the same object, and with the same camera and lens, the centre of one picture being in the optical axis of the lens, and the other picture on one side, or somewhat removed from the position of the first, would it be possible that the two pictures so taken could be similar, or equally good?

Ans. They would be similar; but not exactly alike, or equally good.

Int. 7. Have you such knowledge and experience in photography, and in regard to photographic pictures, that you could tell in case a card was shown you with four pictures upon it whether each of the four pictures was made in the same part of the field of the lens as each of the others?

Ans. I think I could, if the said pictures were made with a short-focus lens covering the whole field of the lens.

Int. 8. Please examine complainants' exhibits of the Pratt boy, so called, particularly Exhibits Nos. 20, 28, 34, and 40, and give your opinion whether the four pictures on each of these exhibits could have been severally made in the same part of the field of the lens; and your reasons, or your principal reasons, for your opinion.

Ans. I judge that they were made, all of them, near the edge of the lens, towards the edge; but that they were not made in the same part, but in corresponding parts; not through the centre of the lens. One reason, the unequal distribution of light over the plate, want of illumination at the corners, which would naturally occur if that portion of the lens had been used; also, slight differences in position, or in the relative parts of the picture.

Int. 9. Please state, if you can, from the inspection of these exhibits, what part must have been taken in the optical axis of the lens, or what part of the exhibit would correspond to the optical axis of the lens.

Ans. As nearly as possible where the four corners come together in the centre of the exhibit.

159 Int. 10. In your opinion, could these pictures of the Pratt boy have been taken with any such or similar device as said Southworth's patented device referred to?

Ans. I think not.

Int. 11. I now call your attention to Complainants' Exhibit No. 21. If you have examined the two pictures on this exhibit, each containing four pictures of a lady, please state whether in your opinion they could have been made with the same or a similar device to said Southworth's patented device.

Ans. I don't think they were made by means of Southworth's device, and for the same reasons I gave in a previous answer.

Int. 12. I now call your attention to Complainants' Exhibits Nos. 36, 37, and 42. Please state whether pictures 1 and 3 upon these exhibits could have been made through the same diaphragm as pictures Nos. 2 and 4.

Ans. They could not.

Int. 13. In taking pictures, four on a plate, with Southworth's patented device, would each of the four pictures be taken through the same diaphragm?

Ans. It would.

Int. 14. And would the four pictures necessarily be exactly alike?

Ans. The person maintaining the same position exactly; yes, they would be practically alike.

Int. 15. I now put into the case "Complainants' Exhibit No. 45, J. G. S., examiner;" please state who made it, and of what it is a copy.

Ans. I can't say who made it; it is evidently a copy of Complainants' Exhibit 16.

J. W. BLACK.

Deposition of John H. Hallenbeck.

BOSTON, *October* 28, 1875.

Direct examination by J. S. ABBOTT, Esq., of counsel for complainants:

Int. 1. Please give your name, age, residence, and occupation.

160 Ans. John H. Hallenbeck; forty one; Boston, Mass; photographic stock salesman.

Int. 2. Were you acquainted with Meade Bros., who carried on the photographic business in Albany, in the State of New York?

Ans. Yes, sir.

Int. 3. When, or about how old were you when you first knew them?

Ans. In 1845; ten years old.

Int. 4. Were you in their employ in Albany?

Ans. Yes, sir.

Int. 5. For about how long a time? State, as nearly as you can, when you commenced at Albany, and when your employment by them at Albany ended, giving the time by stating the years, or by reference to your age at the respective times.

Ans. I commenced about 1845, as near as I remember, and left there, to the best of my recollection, in 1850, in Albany.

Int. 6. In what business were Meade & Bros. engaged while you were so employed by them?

Ans. In the photographic portrait business and photographic stock.

Int. 7. What did you do? State generally what were your duties while in their employment at Albany.

Ans. Assisted in opening the establishment, cleaning and galvanizing plates, and assisting generally in the picture department as far as I was able.

Int. 8. While you were in their employ at Albany, were more pictures than one taken upon the same plate; if yea, how many?

Ans. I remember in one instance seven on one plate being taken.

Int. 9. Please state all the different numbers, exceeding one, which you remember to have seen taken on the same plate in their gallery at Albany.

Ans. At the present time, I don't remember of any other instance.

Int. 10. Describe, as accurately as you can, the manner in which the seven pictures were taken on the same plate.

161 Ans. Ground glass was divided in seven equal spaces by lead-pencil marking; the slide belonging to the tablet or shield was made of tin, and cut into seven pieces to correspond to the marks on the ground glass—sometimes called object-glass—would properly be called the object-glass. In making the first picture the subject was placed so it would come in proper position in the first space marked on the object-glass. After the focus was taken, the tablet was put in the camera-box—the tablet contained the plate which was put in the camera-box. The first slide of the tablet or shield, which had been divided into seven parts, was pulled out and the picture was made. The slide was then replaced, and the tablet withdrawn from the box; the subject placed in position for making the second picture; the focus was taken on the second division, marked on the focus glass; the ground glass was then replaced by the tablet containing the plate; the second slide drawn; the second picture was then made. The same operation was performed in making the seven pictures. That's about the way they made that picture, to the best of my knowledge.

Int. 11. While in the employ of Meade Bros., at Albany, what opportunity had you for seeing and knowing what kind of camera-boxes and plate-holders used therewith were used in their establishment at Albany?

Ans. Such knowledge as one would acquire by being around them all the time, and dusting them, and the general care of them.

Int. 12. While in their employ at Albany, did you see or know of any plate-holder which could be moved when taking pictures, so as to take more pictures than one on the same plate by bringing different parts of the plate, by such moving of the plate-holder, into the field of the lens?

Ans. I don't remember at the present time of any other.

Int. 13. To what do you refer by the word "other," in your last answer?

Ans. The tablet by which they made the seven pictures.

Int. 14. Please examine Defendants' Exhibit No. 8, and the description of it on page 101 of the printed record in this case, and then state whether you ever saw or knew of any such apparatus, or
162 any other apparatus at all resembling it, while you were in the employ of Meade Bros., at Albany.

Ans. I have examined it, page 101, and the exhibit; I don't remember of ever having seen or known one of that description, or anything like it.

Int. 15. Were you acquainted with Christopher C. Schoonmaker, who, I understand, occupied the same gallery after Meade Bros. left it?

Ans. Yes, sir.

Int. 16. Were you in that gallery while it was occupied by said Schoonmaker?

Ans. Yes, sir.

Int. 17. How frequently, and for about how long a time after he commenced the occupation of that gallery?

Ans. I should judge for about a year; I was in there about once or twice a week; I used to drop in occasionally.

Int. 18. Were you in his said gallery after that year, or after the time referred to in your last answer?

Ans. I don't remember that I was. It might not have been a year, off and on; as near as I can recollect, it was about a year.

Int. 19. During that year, or the time to which you refer as being about a year, did you see, or know, or hear of any such apparatus as said Defendants' Exhibit "No. 8," or any other apparatus at all resembling it?

Ans. At the present time I don't remember, as I haven't thought over the matter at all.

Cross-examination by counsel for defendants:

Cross-int. 20. Will you please state your present place of business, and if in the employ of some person or firm, give the name of that person or firm?

Ans. 319 Washington street, Boston; employed by Benjamin French & Co.; they are engaged in the photographic-stock trade.

Cross-int. 21. Referring to question No. 10, and your answer thereto, please state what portion of the work was actually performed by you in producing the picture or pictures therein referred to?

163 Ans. Well, the plate on which the picture was made I might have cleaned; but as there were two or three of us doing the same kind of work there, it is a difficult matter to tell.

Cross-int. 22. Then if you performed any work at all, in connection with the picture or pictures referred to in the last question, it was only that of cleaning the plate, was it?

Ans. That's all.

Cross-int. 23. While you were in the employ of Meade Bros., did you ever use the apparatus for producing a picture or pictures such as described in the 16th question and your answer thereto, and produce a picture or pictures yourself?

Ans. No, sir.

Cross-int. 24. Were you ever in the employment of Christopher C. Schoonmaker referred to in the 15th question?

Ans. Not to my knowledge.

J. H. HALLENBECK.

Deposition of Seth E. Parsons.

BOSTON, *November* 5, 1875.

Direct examination by J. S. ABBOTT, Esq., of counsel for complainants:

Int. 1. Please state your name, age, residence, and occupation.

Ans. Seth E. Parsons; forty-nine; Albany, N. Y.; clerk.

Int. 2. Have you already testified in this case?

Ans. I have.

Int. 3. Were you acquainted with Meade & Bros. while they were engaged in the photographic business, in Albany, N. Y.?

Ans. My acquaintance commenced as they were about leaving Albany.

Int. 4. Who succeeded them in their business in Albany, when they left for the city of New York?

Ans. In the picture business, Schoonmaker & Morrison, and N. E. Sisson in the stock business.

164 Int 5. By "Shoonmaker," do you mean Christopher C. Schoonmaker? I mean the Mr. Schoonmaker who testified in this case in New York, at or about the same time you testified.

Ans. I do.

Int. 6. Is "N. E. Sisson," named in your last answer but one, the same person referred to by you in fol. 380 of defendants' printed record?

Ans. Yes.

Int. 7. While you were engaged with said Sisson where was your place of business, and where the place of business of said Schoonmaker? I mean to enquire as to the location of these two places of business in their relation to each other; how near they were to each other.

Ans. N. E. Sisson's location was 496 Broadway, corner of Maiden Lane; Schoonmaker had his rooms over the post-office; the building being located in Broadway, between State and Exchange streets; that is to say, it stood in Broadway, being between State and Exchange streets, one block being between the post-office building and the block where N. E. Sisson was situated.

Int. 8. How frequently were you in said Schoonmaker's gallery during the first three years while you were with said Sisson?

Ans. I was in his reception room perhaps once in one or two weeks, I should judge—very seldom in the operating room.

Int. 9. Referring to the pictures made by you, and described or referred to in your testimony in defendants' printed record, pp. 95–99, please state whether the pictures were severally made each in the centre or best part of the field of the lens.

Ans. They were made on one side.

Int. 10. With the apparatus described in your said testimony was it practicable to make more pictures than one on the same plate and have each picture made in the centre or best part of the field of the lens?

Ans. No, sir.

Int. 11. Please refer to your answer to the third question, folio 381, and state whether there is any error in that answer as printed, and if so, please correct it.

165 Ans. There is an error; the error consists in the word "ordered," in the first and second lines. It should read "altered."

Int. 12. Are you acquainted with the patented device of A. S. Southworth, for taking more pictures than one on the same plate without removing the plate from the camera-box, and taking each picture in the centre or best part of the field of the lens?

Ans. I am.

Int. 13. That patent is dated April 10, 1855; prior to that date, had you any knowledge or information of any method of taking more pictures than one upon the same plate, each in the centre or best part of the field of the lens, without removing the plate from the camera?

Ans. No, sir.

Int. 14. Was there ever any firm in Albany, to your knowledge or information, consisting of "Sisson & Parsons"?

Ans. No, sir.

Int. 15. The name of "Sisson & Parsons," of Albany, N. Y., appears in folio 112 of defendants' record; please explain, if you can, how the name of such a firm might have been used.

Ans. N. E. Sisson was proprietor of a photographic stock business, and I was clerk for him nearly ten years; and probably parties not knowing us intimately might be led into the error of thinking we were partners.

Int. 16. Did you commence being clerk for said Sisson when he commenced said business?

Ans. I did not.

Int. 17. When did you commence with him as clerk?

Ans. November, 1850.

Int. 18. While in his employ, state whether or not you were well acquainted the camera-boxes and plate-holders in which he dealt?

Ans. I was; very few instruments were sold without my fitting them up or having them pass through my hands.

Cross-examination by counsel for defendants:

Cross-int. 19. In operating the box as described by you on p. 166 96 (question and answer 4) of defendants' record, to what part of the field of the lens was each portion of the plate exposed in taking the pictures as described by you?

Ans. It would be on one side; that is, one side from the centre.

SETH E. PARSONS.

Deposition of Henry McBride.

NEW YORK, *Nov.* 29, 1875.

Direct examination by ALBERT A. ABBOTT, Esq., of counsel for complainants:

Int. 1. What is your name, age, residence, and occupation?

Ans. Henry McBride; I am forty-five years of age; reside at Albany, and am an engrosser. I have resided at Albany all my life, with the exception of about a year.

Int. 2. Were you acquainted with Meade Brothers, who carried on the photographic business in Albany, N. Y.?

Ans. Yes.

Int. 3. When were you first acquainted with them?

Ans. I was acquainted with them as early as 1840.

Int. 4. Were you ever in their employ?

Ans. Yes, sir.

Int. 5. From what time to what time were you in their employ?

Ans. It was about 1846 when I went to work for them, and I remained with them about five years.

Int. 6. They were during all that time in the photographic business?

Ans. Yes, sir.

Int. 7. What were your duties while engaged by them?

Ans. Operator.

Int. 8. What others, if any, during that time, were operators or made pictures for Meade Brothers?

Ans. They had a young man there by the name of William Rablin, and others, who were there for short times learning the business. Mr. Charles Meade made pictures when I was out.

167 Int. 9. Did you make most of the pictures?

Ans. Yes, sir.

Int. 10. Were you familiar with all the methods by which pictures were taken at the establishment of Meade Brothers, during the term of your employment there?

Ans. Yes, sir.

Int. 11. Did you see or know of or hear of any method of taking more pictures than one upon the same plate without removing the plate-holder from the camera in that gallery, before Meade Brothers moved from Albany?

Ans. I knew of no method of taking more than one picture without moving the plate-holder. I took two pictures by moving the camera, or two impressions on one plate.

Int. 12. Please describe, very particularly, how that was done.

Ans. I would set the person and expose one side of the plate; the one side of the plate would be exposed on the person, and the other side of the plate would be exposed on a dark ground. We would make a short sitting on making the first impression of the person, shorter than we would usually make it, on account of the other part of the plate being exposed; and then we would move the camera so as to bring the object in the space which had been exposed to the dark ground.

Int. 13. That result was accomplished by moving the camera-box?

Ans. Yes.

Int. 14. Was there any method employed at the gallery of Meade Brothers for making several pictures on the same plate without removing the plate-holder from the camera, while you were there?

Ans. No, sir; we made five impressions on the same plate, but it was by removing the plate-holder every time.

Int. 15. Please describe exactly how you made five pictures on the same plate?

Ans. We marked our object-glass with a form of five openings, one in the centre and the others around it; then we had a corresponding frame made to fit in the plate-holder that would meet those 168 openings; the frame was made so that the marks on the object glass would come opposite the openings in the frame; these openings in the frame were covered with a little slide which we removed every time we made an impression. Each of these slides was affixed by a rivet. We would then get our focus upon one of these openings in the frame, and remove the slide, and then draw out the main slide, which would expose only that opening, that is, the opening made by the little slide, and so we took one picture. In proceeding to take the next we replaced our object-glass, and drew another focus by moving the camera-box, and then went through the same operation as before. So that the means by which we took these several pictures on the same plate was by moving the camera-box.

Int. 16. Who took pictures in this way at the Meades' gallery?

Ans. I did. I think Hallenback did, too. No others that I am positive about.

Int. 17. Was any other method employed at that gallery for taking more than one picture on the same plate?

Ans. No.

Int. 18. Was there any sliding or shifting plate-holder used?

Ans. None that I knew of; we had to move the plate-holder every time we took an impression.

Int. 19. If there had been any other method employed at that gallery for making more than one picture on the same plate, while you were there, would you have known it?

Ans. I would.

Int. 20. While employed with Meade Brothers, did you frequently visit other photographic establishments?

Ans. Yes, sir.

Int. 21. Where?

Ans. I visited Dennison's rooms, in Albany, Thompson's, in Albany, and I visited the principal photographic rooms in New York.

Int. 22. What opportunities did you have, during that time, for learning the methods used by different houses in taking pictures?

Ans. When anything new came out we were sure of getting hold of it by acquaintance with other operators, and by visiting these establishments.

(Here follow 2 photographs, marked pages 169 & 170.)

171 Int. 23. And during the time you were so employed, did you ever know or hear of any method of taking more than one picture on the same plate without moving the camera-box?

Ans. No, sir.

Int. 24. Did Meade Brothers sell out their establishment at Albany?

Ans. Yes, sir.

Int. 25. When?

Ans. It was somewhere about 1850; I won't be positive.

Int. 26. And from Albany where did they go?

Ans. To New York.

Int. 27. Were you with them after they came to New York?

Ans. Yes, sir.

Int. 28. How long?

Ans. About eight months.

Int. 29. Prior to April, 1855, did you ever see, know, or hear of any camera or apparatus for taking pictures by means of which more than one picture could be taken on the same plate without removing the plate from the apparatus, and without swinging or moving the camera or any part thereof? I mean to inquire whether prior to April, 1855, you ever saw, knew, or heard of any camera or plate-holder such that several successive pictures could be taken on the same plate in the same part of the field of the lens without removing the plate or plate-holder from the camera, and without moving the camera?

Ans. There was a camera-box that had four tubes for making a number of pictures; I never used one of them: I remember of seeing one of them; I remember of seeing a camera-box with two tubes, and one with four tubes.

(Answer objected by counsel for complainant as not responsive.)

(On the question being re-read the witness answers:)

No, on the same part of the field of the lens it would be impossible.

Int. 30. Do you mean by that answer that it would have been impossible for you to hear of such a camera prior to April, 1855?

(Objected to as leading.)

172 Ans. I think I would have known of it if there had been any such camera.

Int. 31. (Question 29 repeated.)

Ans. I did not.

Adjourned to Nov. 30, 1875, at 11 o'clock a. m.

NEW YORK, *November* 30—11 a. m., 1875.

Direct examination by ALBERT A. ABBOTT, Esq., of counsel for complainants:

Int. 32. Please look at the apparatus I show you, and say whether it is substantially the device you used in connection with the ordinary camera in taking five pictures on the same plate, which you testified about yesterday.

Ans. Yes, I should say that is just about the same thing.

Int. 33. The successive pictures were made by getting the focus successively on each of these openings by moving the camera, and then withdrawing the slide?

Ans. Yes.

(Apparatus referred to offered in evidence and marked "Complainant's Exhibit Bride No. 1, E. G. T., examiner.")

Int. 34. What position in the camera did this apparatus occupy as you used it?

Ans. The apparatus was fastened down on the plate-holder in front of the plate which received the impression.

Cross-examination by C. F. BLAKE, Esq., of counsel for defendants:

Cross-int. 35. How old were you when you first made the acquaintance of the Meades?

Ans. Well, I was thirteen—fourteen.

Cross-int. 36. How old were you when you first went into their employ?

Ans. About sixteen.

Cross-int. 37. What had you been doing before you went into their employ?

173 Ans. I had been with Givét in the same business.

Cross-int. 38. How old were you when you went with Givét?

Ans. I was not quite sixteen. I was only there a short time.

Cross-int. 39. Before going with Givét what had you done?

Ans. I attended school.

Cross-int. 40. The first work you ever did was when you went with him?

Ans. No; I did work in a dry-goods store a little while.

Cross-int. 41. With whom, when, and how long?

Ans. Gay & McGatt, just before—somewhere about two or three months, as near as I can remember.

Cross-int. 42. What year was it?

Ans. 1844–1845.

Cross-int. 43. Is that the first work you ever did?

Ans. I was in the store of my father. I can't say it was working.

Cross-int. 44. How long were you in the store of your father, and in what year or years?

Ans. I can't say; I was in and out, and I went to school at the same time.

Cross-int. 45. What year was it, and in what month was it, that you began to work for the Meades?

Ans. I can't tell the month. It was about 1846, that is as near as I can remember.

Cross-int. 46. In what capacity did you go into their employ?

Ans. As operator, to make pictures.

Cross-int. 47. Who were the partners of Meade Brothers?

Ans. Charles and Henry Meade.

Cross-int. 48. What did they do about the business when you went there?

Ans. Henry took charge of the stock business. Charles was an operator, too; but he didn't do much at it. He was in and out, and when I was away he operated.

Cross-int. 49. What was the business of Meade Brothers at that time?

Ans. Daguerreotypists. They dealt in the materials, too.

174 Cross-int. 50. How much room did their establishment occupy?

Ans. They occupied three rooms on one side of the hall of the Albany Exchange, on the third floor, and two rooms on the other side of the hall, and one of these was on the fifth floor, which was an operating-room.

Cross-int. 51. How many operating-rooms were there?

Ans. We used one of these three rooms when I went there, then we stopped operating down below, and used this upper one altogether.

Cross-int. 52. When you first went there how many operators were there, and what were their names?

Ans. Charles Meade was all there was considered as an operator.

Cross-int. 53. Now when you first went there, do you mean to be understood as saying that your part of the business consisted in posing the subject and taking the picture with the camera?

Ans. Yes, sir.

Cross-int. 54. Who cleaned and prepared the plates at that time?

Ans. A young man by the name of Hallenbeck assisted me when I came there in cleaning the plates only.

Cross-int. 55. How long did you continue work at cleaning the plates for the Meade Brothers?

Ans. During the time of my service with them I cleaned and prepared the plates, if I had no one to assist me.

Cross-int. 56. Where did you learn to take daguerreotypes?

Ans. At Daniel E. Givét's.

Cross-int. 57. How long did it take you to learn?

(Objected to as not sufficiently definite.)

Ans. He used to give a person he would take about six weeks to perfect them. I picked it up inside of that time, I guess; I was learning all the while.

Cross-int. 58. What did Meade pay you, when you went there?

Ans. Seven dollars and a half a week, at first.

Cross-int. 59. How long after you went with the Meades was it before another operator was engaged?

Ans. There was none during my time there. I might say I was the only one. Mr. Erwin was an operator, but he was also the book-keeper, and only operated when he wanted to show a man experiments.

175 Cross-int. 60. And during the five years you were there you will swear that no one but yourself took pictures in the Meade gallery?

Ans. No.

Cross-int. 61. How many persons did take pictures in the Meade gallery besides yourself during these five years?

Ans. I can't say. I can't answer that.

Cross-int. 62. Don't you think that at least half a dozen persons must have done so during that time?

Ans. Yes.

Cross-int. 63. You are sure you were there five years?

Ans. I think about five years.

Cross-int. 64. How do you fix the time?

Ans. I fix the time from the time I left.

Cross-int. 65. When did you leave?

Ans. In 1851.

Cross-int. 66. Why did you leave the Meade Brothers' employ?

Ans. I wanted to go into business for myself.

Cross-int. 67. Who succeeded you as operator in their gallery?

Ans. I can't say who succeeded me; there were several there.

Cross-int. 68. You mean there were several there when you left?

Ans. Yes.

Cross-int. 69. How many were there when you left?

Ans. Two or three.

Cross-int. 70. Did you accompany Meade Brothers to New York when they moved down?

Ans. I remained in Albany for a time. I don't know how long it was.

Cross-int. 71. How long before they came down did you open your gallery in Albany?

(Objected to as assuming a fact not proven.)

Ans. I didn't open my room till after they went away.

Cross-int. 72. How long after?

Ans. Two or three years; it might be less.

Cross-int. 73. What were you doing during these two or three years?

176 Ans. I was with them.

Cross-int. 74. With them, where?

Ans. Albany and New York City.

Cross-int. 75. How long were you with them in New York City?

Ans. Well, for six or eight months.

Cross-int. 76. When did you finally leave them down here; in what year?

Ans. In 1851.

Cross-int. 77. And in Albany and in New York together you were with them in all two or three years, were you?

(Objected to as assuming a fact not proven.)

Ans. No. About or near five years; somewheres about five years.

Cross-int. 78. In your answer to the 71st cross-int. you said you didn't open your room till after they went away. In the next question I asked you, "how long after," you answered, "two or three years; it might be less." In the next question I asked you, "what were you doing those two or three years?" You replied, "you were with them." What two or three years did you refer to in this last answer?

(Objected to as an improper repetition of cross-examination and already sufficiently answered, and I request that the questions and answers referred to in this question be read to the witness in connection with the question.)

Ans. The two or three years is the time when they disposed of their place in Albany, or how long they were down here before they disposed of their place in Albany I don't exactly remember; I can't remember the time when they came down here. They were here some time before they disposed of their place. I was with them all the time.

(Answer objected to as not responsive by counsel for complainants.)

Cross-int. 79. Do you mean that you came down with them?

Ans. No, sir.

Cross-int. 80. You don't mean that you were with them two or three years in New York, do you?

177 Ans. No, sir.

Cross-int. 81. Do you know what two or three years you do mean?

Ans. Well, I think that was from the time they came down here until I opened my room.

Cross-int. 82. What were you doing during these two or three years?

Ans. Operating.

Cross-int. 83. On your own account?

Ans. No, sir.

Cross-int. 84. With whom, then?

Ans. Meade Brothers.

Cross-int. 85. You say in your answer to the 81st cross-int. that these two or three years were "from the time they came down here till I opened my room." When did they come down here?

Ans. I can't answer that. I can't say what date they did come down.

Cross-int. 86. When did you open your room?

Ans. In the year 1851.

Cross-int. 87. Were the two or three years you referred to the years 1849, 1850, and 1851?

Ans. Yes, sir.

Cross-int. 88. In your answer to the 81st cross-int., in answer to the question, "do you know what two or three years you mean"; "well, I think that was from the time they came down here until I opened my room"; do you mean that the years 1849, 1850, and 1851 were the years which intervened between the time when they came down here and the time when you opened your room?

Ans. Yes, that was the intervening time; but it is very hard to work out the dates.

Cross-int. 89. What did you do when the Meade Brothers opened their gallery in New York?

Ans. I was operating for them in Albany.

Cross-int. 90. How long did you operate their place for them in Albany after they opened their New York gallery?

Ans. I operated there until they disposed of the place.

178 Cross-int. 91. Alone or with assistants?

Ans. They had assistants there; they were not operators.

Cross-int. 92. Were any of the Meade Brothers there any part of the time?

Ans. I think they came up once in a while.

Cross-int. 92. As soon as their rooms were disposed of in Albany, did you come to New York to them?

Ans. Yes, sir.

Cross-int. 93. During the time you were in their employ, how frequently were you absent from the rooms?

Ans. I was very seldom absent.

Cross-int. 94. Did you, in that time, visit New York and other cities to purchase materials?

Ans. No.

Cross-int. 95. How long did you continue to run your own rooms in Albany?

Ans. About six years.

Cross-int. 96. What did you do then?

Ans. Sold out and went into the grocery business.

Cross-int. 97. Since that time have you been in the daguerreotype or photographic business?

Ans. No, sir.

Cross-int. 98. Who made the model which has been produced this morning?

Ans. I don't know.

Cross-int. 99. When did you first see it?

Ans. This morning.

Cross-int. 100. Did you give any one a description how to make it?

Ans. Not unless they got it from what evidence I gave yesterday.

Cross-int. 101. When did you first hear of this case?

Ans. I think it was sometime the first part of last month, I guess.

Cross-int. 102. From whom did you hear of it?

Ans. From Mr. Wing.

179 Cross-int. 103. Prior to that time, and since you left the Meades' employ, have you had any occasion to recall to mind the various cameras and modes of taking pictures in use in the Meades' gallery?

Ans. I have paid but little attention to pictures since I went out of the business.

Direct examination resumed by ALBERT S. ABBOTT, Esq., of counsel for complainants:

Int. 104. How do you fix the time when you went into business for yourself?

Ans. I am positive of the year 1851, as I was married on November 29th, 1852.

Int. 105. And do you recollect that it was a year before your marriage?

Ans. A little over a year.

Int. 106. And do you recollect distinctly how long in all you were with Meade Brothers from the time you first went there until you left left them in New York?

Ans. To the best of my judgment it was about five years; I was twenty-one years of age when I left them, and that was in 1851.

Int. 107. I understand you cannot fix the date exactly when they opened their gallery in New York.

Ans. No; I cannot, exactly.

Cross-int. 108. Then when you say that it was two or three years after they opened their New York gallery before you went into business for yourself you were not positive of the fact?

Ans. I am not positive exactly of the date or the time.

Int. 109. In answer to cross-int. 93 you say that you were very seldom absent from the rooms of Meade Brothers while in their employ. What do you mean by that?

Ans. I mean I didn't have any vacation; I was to be there during the usual hours for operating.

Int. 110. You have said that you were with Meade Brothers down to the time you started business for yourself. Do you mean by that simply that you were in their employ?

180 Ans. Yes, sir.

Int. 111. I believe you have said "There were no other operators there while I was there." Do you mean none others at Albany, or none others in the employ of Meade Brothers?

Ans. I mean none others at Albany while I was there; there was here.

Int. 112. You have said that a half dozen others made pictures at Meade Brothers' in Albany while you were there. Explain what you mean.

Ans. We had men there to learn the art, and we sometimes would permit them to make a sitting of a person who desired a picture as an experiment.

Int. 113. You explained in substance to me what your testimony would be in this case yesterday, did you not?

Ans. Yes, sir.

Int. 114. And you then described to me a device similar to Exhibit Bride No. 1, as used by you in making several pictures from the same plate?

Ans. Yes, sir.

Sworn and subscribed to before me this 30th day of November, 1875.

HENRY McBRIDE.

181 *Agreement.*

It is agreed that the annexed exhibit, marked "Complainants' Exhibit No. 46," is a correct copy of the original; that the signatures to said original are genuine; and that "E. & H. T. Anthony" is the name of a partnership then existing comprising two of the defendants in this case.

Also, that the annexed exhibit, marked "Complainants' Exhibit No. 47," is a correct copy of the original; that the signatures to said original are genuine; and that "E. & H. T. Anthony & Co." thereon is the name of the firm comprising the defendants in this case.

These copies are to be used in evidence with the same effect as the originals might be.

CHARLES F. BLAKE,
For Defendants.

182 COMPLAINANTS' EXHIBIT NO. 46.

The multiplying camera patent case.

SIMON WING
vs.
CHARLES F. RICHARDSON.

This suit was brought for the infringement of letters patent granted to Albert S. Southworth for an improved plate-holder for cameras, dated April 10th, 1855, and reissued September 25th, 1860.

The case was heard at Boston, before Judge Clifford, at the October term, 1864, and the following May term the following decree was rendered against the defendant:

Circuit court U. S., Massachusetts district, May term, 1865.

SIMON WING
vs. } In eq.
CHARLES F. RICHARDSON.

This cause came on to be heard upon the bill, answer, replication, and proofs exhibited by the parties, and the same having been argued by counsel and considered by the court, it is now declared and adjudged that the letters patent in the said bill mentioned are valid, and that the respondent hath infringed the same.

And therefore it is ordered, adjudged, and decreed that the said cause be referred to George S. Hillard, one of the masters of this court, to take an account of all such gains and profits as the said respondent hath received by reason of his infringement of the said letters patent of the complainant, and in taking said account the master is authorized to examine the respondent on oath, and to cause the said respondent to produce before him all books and papers pertinent to the inquiry by him to be made.

And it is further adjudged and decreed that the said respondents, his servants and agents, are, and each of them is, enjoined and commanded not to continue to infringe the said letters patent of the complainant; and this last order is to continue and be in force until the further order of the court, and all further directions are reserved until the coming in of the report of the master.

By the court.

JOHN G. STETSON,
Clerk pro tem.

183 Circuit court U. S., Mass. district.

I, John G. Stetson, clerk pro tem. of the circuit court of the United States for the first circuit and district of Massachusetts, do hereby certify that the foregoing is a true copy of a decree in said cause of Simon Wing, in equity, vs. Charles F. Richardson.

In testimony whereof I have hereunto set my hand and the seal of the said circuit court this fourteenth day of June, A. D. 1865.

[L. S.] JOHN G. STETSON,
Clerk pro tem.

New York, , 1865.

We, the undersigned, having seen the decision in the U. S. circuit court held at Boston June 14th, 1865, relative to the multiplying camera-box, in the case of Simon Wing vs. Charles F. Richardson, believe the same to fully sustain the claims of the patent now held by Messrs. Ormsbee & Wing:

Scovill Manufacturing Co.,
Samuel Holmes, *Agent.*
Benj. French & Co.
Wilcox & Graves.
George H. Chapman.
R. V. Harnett.
E. & H. T. Anthony.
Williard & Co.
Nelson Wright.
Dodge & Leahy.
Wm. H. Mountfort.
Holmes, Booth & Hayden.
John Sawyer & Co.
William B. Holmes.
Cleaveland & Co.
O. S. Follett.

Complainants' Exhibit No. 47.

New York, *Feb.* 1, 1868.

This is to certify that we, the undersigned, manufacturers and dealers in photographic materials, have discontinued the sale of multiplying camera-boxes which infringe on the Ormsbee & Wing patent, except when parties ordering the same comply with the provisions named below; legal notice having been given us this day to that effect. All parties ordering boxes with sliding movement which infringe on 184 said patent must remit $50.00 with their order, when a license, signed by the patentee, to use the same, will be furnished with the box.

WILLARD MAN'F'G CO.,	New York.
Per S. H. WILLARD, *Sec'y.*	
E. & H. T. ANTHONY & CO.,	"
CHAPMAN & WILCOX,	"
SCOVILL MAN'F'G CO.,	"
SAM'L HOLMES, *Agent.*	
HOLMES, BOOTH & HAYDENS,	"
H. H. HAYDEN, *V. Pres.*,	"
WILLIAM B. HOLMES,	"
WILLIAM H. LEWIS,	"
BENJ. FRENCH & CO.,	Boston.
GEO. S. BRYANT & CO.,	"
DODGE, COLLIER & PERKINS,	"

Deposition of Alfred J. Sellwood.

Albany, *February* 24, 1876.

Direct examination by J. S. Abbott, Esq., of counsel for complainants:

Int. 1. Please give your name, age, residence, and business.

Ans. My name is Alfred J. Sellwood; my age is forty-seven years; reside in Syracuse; am a carpenter and builder.

Int. 2. How long have you resided in Syracuse?

Ans. Thirty-one years, about.

Int. 3. State whether you are known by the name of Alfred Sellwood.

Ans. Yes.

Int. 4. While you have resided in Syracuse has there been any other person living there named Alfred Sellwood besides yourself?

Ans. No, sir; not to my knowledge.

Int. 5. And if there had been would you probably have known it?

185 Ans. Yes, sir.

Int. 6. Were you ever engaged in the photographic or daguerreotype business?

Ans. In the daguerreotype business, I was.

Int. 7. When? State as accurately as you can the time when you commenced and the time when you ended that business.

Ans. I commenced in the spring of 1851, and sold my car, I think, in the spring of 1854. I left that business in the spring of 1854.

Int. 8. Are you acquainted with James Hinds? If yea, state as accurately as you can when you first became acquainted with him.

Ans. I am. I first became acquainted with him in the spring of 1851.

Int. 9. From whom did you learn the art or process of taking daguerreotypes, and when?

Ans. From James Hinds, in the spring of 1851.

Int. 10. Did he give you instructions for pay or for compensation?

Ans. Yes.

Int. 11. After you ceased being a pupil of his, state whether you continued in his employment; and, if yea, how long?

Ans. I remained in his employment after I ceased being a pupil of his, but did not receive any wages for my services. I so remained until the 1st of September, 1851.

Int. 12. Did said Hinds ever show, or in any way make known to you, either while you were a pupil of his or afterwards, or previously, a process by which more pictures than one could be taken on the some plate? If yea, please describe the process.

Ans. Yes. The process was to chemical the plate as usual, put it into the wooden slide that goes into the camera, and insert the metal slide over that. On the wooden slide, as near the middle as possible, was a mark, made with pencil or otherwise. We then turned the camera on its side, and then we focused the object on the ground glass, which we made oval and of the size of the mat that we were going to use for the picture. Then we would focus the object and take
186 out the glass slide, and insert the slide with the plate in. Then
when the sitter was ready we drew the metal slide out from the wood slide to the mark made on the wood slide, as before described. We allowed it to remain so for the usual length of time that we supposed would make a picture, and when we thought the impression was completed we pushed the metal slide back again then to its original place over the plate, took the wooden slide into the dark room. We then drew out the slide and turned the plate around and put in the slide again, and put it into the camera and repeated the same operation as before described, and put it over the mercury bath to develop it in the usual way, and the result was we had two pictures, one on each side of the plate.

Int. 13. In taking the first picture in what position would the head be, as compared with the head of the object to be taken?

Ans. The reverse to the object focused. It would appear in the camera upside down.

Int. 14. And would or not the second picture, the one taken on the other end of the plate, be upside down, as compared with the sitter?

Ans. It would.

Int. 15. Now, after these two pictures had been so taken upon the same plate, how would they appear in their relation or position to each other? I mean to inquire whether both heads would be the same way, or one head up and the other down, as compared with each other.

Ans. One head would be up and the other down on the plate.

Int. 16. Please state whether said Hinds ever showed you or in any way ever made known to you any other process or mode of taking two pictures on the same plate, excepting the one you have above described.

Ans. Never.

Adjourned to 3½ p. m. February 24th.

February 24—3½ p. m.

Int. 17. Prior to the summer of 1855 did you ever see or know of any method of taking two pictures on the same plate, except by
187 removing the plate from the camera, taking it into the dark room, and turning it, and again inserting it with the plate-holder into the camera, as you have already described?

Ans. No, sir.

Cross-examination by counsel for defendants:

Cross-int. 1. How long have you been engaged in your present business?

Ans. Since the summer of 1854.

Cross-int. 2. State whether for your own account, or in the employ of other persons.

Ans. My brother and I are in business together.

Cross-int. 3. Since when?

Ans. Since 1854.

Cross-int. 4. Under what name or firm?

Ans. E. G. Sellwood and Brother. There was no written agreement as to partnership. I always took my share of the profits at the end of the year.

Cross-int. 5. Has anybody else been associated in business with you or your brother during that time?

Ans. No, sir.

Cross-int. 6. State generally the nature of that business.

Ans. It included the whole of the house-building and house-fitting, including painting papering, and all that was to be in a house, sometimes; sometimes only part of it.

Cross-int. 7. State on the average how many persons are employed in your business besides yourself and your brother.

Ans. During the last year, the last job we did was in rebuilding up a burnt district; we employed four regular carpenters besides myself and brother, and laboring men.

Cross-int. 8. What class of work did you perform during the last year?

Ans. The lighter portions. I always draw full wages; am able to do whatever there is to be done.

Cross-int. 9. How many men did you and your brother employ on an average in the years 1854 and 1855?

Ans. I can tell better in 1854, when we commenced.

188 Cross-int. 10. How many men did you employ at that time when you commenced?

Ans. I think my brother employed two regular carpenters all the summer, and other men as they were wanted.

Cross-int. 11. What was the nature of the work which you performed during that time?

Ans. Anything that was required in the business. When my brother was away, I oversaw the work. When my brother was there, I did shingling and laying floors, and anything that was required.

Cross-int. 12. What was your occupation immediately prior to your going with your brother?

Ans. The daguerreotype business, immediately before that.

Cross-int. 13. Where, immediately before that, were you engaged in the photographic business?

Ans. At Syracuse, on Genesee street, no number; I built a car exactly like Mr. James Hinds'. It stood on what is now called Yates' block.

Cross-int. 14. How long did it stand there continuously prior to that time?

Ans. I think I moved over there in the month of January, 1852, and it remained there continuously until the spring of 1853.

Cross-int. 15. Where was it after the spring of 1853?

Ans. We moved to our house on my brother's lot.

Cross-int. 16. And then you were not on Genesee street, where you have stated, from the spring of 1853 to the spring of 1854, as you have previously stated?

Ans. I removed the car off to my brother's lot on Burnet street until the fall of that year, 1853, then I removed it back to the same place on Genesee street.

Cross-int. 17. Did you make any other change of location from January, 1852, till the spring of 1854?

Ans. No, sir; only on Genesee street and at my brother's house, the only two places.

Cross-int. 18. Where were you located prior to the spring of 1853?

Ans. On Genesee street.

189 Cross-int. 19. For how long a time continuously?

Ans. From the time I moved there in 1852; from January, '52 to the spring of '53; that is the longest time I was in one place.

Cross-int. 20. Where were you located prior to January, 1852?

Ans. My car was built in September, 1851: I then went into the country, returned to the city the middle of November, stood the car on to a vacant lot on Salina street until I rented the stand on Genesee street.

Cross-int. 21. From the time the car was completed in September, 1851, until you sold the same in the spring of 1854, was anybody connected with you in that business?

Ans. No.

Cross-int. 22. Did you, during that period, employ any assistant?

Ans. No.

Cross-int. 23. How were you employed prior to September, 1851?

Ans. I learned the daguerreotype business of Hinds in the spring of 1851. During the summer my brother was building me a car. I paid Mr. Hinds about a month after I was there, what he charged, fifteen dollars. I then asked him if he would allow me to remain with him so that I might become thoroughly proficient in the art. I worked with him, not receiving any wages until my car was finished; that was in the beginning of September, 1851.

Cross-int. 24. Where was Mr. Hinds' place of business during the time you were with him?

Ans. On a vacant lot on Genesee street, nearly opposite where my car stood afterwards. He worked in a car.

Cross-int. 25. Did he work in a car during all the time you were with him, both as pupil and afterwards?

Ans. Yes.

Cross-int. 26. How many camera-boxes did Mr. Hinds have in that car?

Ans. One; a half camera it was called.

Cross-int. 27. At what period of the time you were with said Hinds did he show you the process described in your direct examination?

190 Ans. It was during the summer that I was with him. I don't know whether it was right at the commencement or not.

Cross-int. 28. Was it while you were his pupil, or afterwards?

Ans. He considered me his pupil until I left him; it was the agreement when I paid him.

Cross-int. 29. Was it before or after you paid him?

Ans. I should say it was before.

Cross-int. 29. How long before?

Ans. I don't know how long before; but it was before, for when I paid him the fifteen dollars, said I, "Mr. Hinds, I pay you this fifteen dollars; have you learnt me all you know of this art?" He said "I have," and I never found him out afterwards in an untruth.

(Objected to what Mr. Hinds said, by respondents' counsel; and by complainants' counsel, last sentence objected to, as irresponsive and inadmissible.)

Cross-int. 30. How long prior to the time that you paid Mr. Hinds the fifteen dollars were you with him?

Ans. Thirty days was the time he said a man of ordinary capacity could learn that business.

Cross-int. 31. What month of the year was that?

Ans. The latter end of March, or the beginning of April, I paid him; I was there during the month of March, and it might have been a part of February; in the month of April I paid him, the thirty days fell due.

Cross-int. 32. At what time in the month of March did he show you the process you have described?

Ans. That I could not state; it was before I paid him the fifteen dollars.

Cross-int. 33. Will you swear positively that he showed you that process in the month of March, 1851?

Ans. No; I don't think I could swear that positively.

Cross-int. 34. Will you swear positively that he showed you that process in the month of April, 1851?

Ans. I swear positively that before the month of May, 1851, he showed me that process, and he did not think it amounted to anything.

191 Cross-int. 35. Did he describe that process to you in words, or did he perform the process in your presence?

Ans. He performed the process in my presence as he did all others, and showed me, marked the camera for me.

Cross-int. 36. How many times did he do this?

Ans. I don't think we made half a dozen plates in that way. It was a mere experiment of his.

Adjourned to 9½ a. m., February 25th.

FEBRUARY 25—9½ a. m.

Cross-int. 37. How were you employed prior to the spring of 1851?

Ans. That winter I was in Dr. Coon's office, reading medicine.

Cross-int. 38. How long a time were you there with him?

Ans. I suppose about two months. Before being with Dr. Coon I was two or three times a week, or more, at the office of Dr. Mather Williams. My leisure time I spent reading some medical work or other.

Cross-int. 39. How were you occupied during the year 1850; where, and with whom?

Ans. Living at home with my father and mother. My father died in the fall of 1850.

Cross-int. 40. Were you living at home during all the year 1850?

Ans. Yes, sir.

Cross-int. 41. What were you doing in the year 1849?

Ans. I was living at home; occasionally I helped my father and brother in their business, in any light jobs that I could do.

Cross-int. 42. When, where, and from whom did you learn your trade of a carpenter?

Ans. From my father and brother who were always engaged in the business at that time. My brother was ten years older than myself.

Cross-int. 43. Do you consider James Hinds to be a man of truth?

(Objected to by complainant's counsel, as incompetent and inadmissible in cross-examination.)

192 Ans. Yes, sir. I never found him otherwise.

Cross-int. 44. Would you believe any statement made by James Hinds?

(Objected to by complainants' counsel, for same reasons as last stated.)

Ans. Any statement that Mr. Hinds made I should fully believe that he believed what he stated honestly to be correct. My business relations with him were always of the most amicable kind.

Cross-int. 45. Then you think him no more liable to make mistakes than you would be, do you?

(Objected to, on same grounds as last above stated.)

Ans. No, sir; I don't think he would; whatever he said I think he would honestly believe.

Direct examination resumed:

Int. 1. (de bene). How long since Mr. Hinds moved from Syracuse?

Ans. I don't know that I can answer that definitely. I think it was in the fall or winter of 1852.

Int. 2. (de bene). Since he moved from Syracuse, have you had dealings with him or known much about him?

Ans. Not much, sir. He has visited our house two or three times since. He generally calls when he comes through.

Int. 3. (de bene). How far is Schenectady from Syracuse?

Ans. About 132 miles.

Int. 4. (de bene). Suppose said Hinds should testify that when you were his pupil he instructed you or showed you a process by which two pictures were made on the same plate before removing the plate or plate-holder from the camera; what would you say as to the correctness of such statement?

(Objected to, unless the supposed testimony is shown to be testimony given by Hinds, and as incompetent on account of the supposition.)

Ans. He never showed me any such thing. I could not say that I would believe it, because he did not show me any such process.

193 Cross-examination resumed:

Cross-int. 1. And yet you have stated you believe James Hinds to be a man of truth, have you not?

(Objected to by complainants' counsel, as incompetent and inadmissible in recross-examination.)

Ans. Yes; but I should consider in that instance that he was mistaken; that he honestly believed what he stated to be correct.

Cross-int. 2. Have you never been mistaken in stating facts at some time in the whole course of your life?

(Same objection as to last question.)

Ans. I should consider that a question that no man could answer in the affirmative.

ALFRED J. SELLWOOD.

Sworn and subscribed before me this 25th day of February, 1876.
WILLIAM LANSING, *Examiner.*

Deposition of William W. Wood.

ALBANY, *February* 24, 1876.

Direct examination by J. S. ABBOTT, Esq., of counsel for complainants.

Int. 1. Please give your name, age, residence, and business.

Ans. My name is William W. Wood; age, forty-six; residence, 228 Madison avenue, Albany; business, photographer.

Int. 2. How long have you been engaged in photographic or daguerreotype business?

Ans. Since 1849; that will be twenty-seven years this coming spring.

Int. 3. And where?

Ans. I have been located here since 1855; previously to that at different places, a small length of time at a place.

Int. 4. Are you acquainted with Christopher C. Schoonmaker, now of Troy? If yea, when did you first become acquainted with him?

194 Ans. I am acquainted with him. My first acquaintance with him was in 1848, to the best of my recollection.

Int. 5. Were you ever in his employment? If so, when, where, and in doing what?

Ans. I was; from some time in the summer of 1855, until the spring of 1857; engaged in making daguerreotypes, ambrotypes, and also photographs; in the Exchange building, in Albany.

Int. 6. Do you know whether that was the same place previously occupied by Meade Brothers?

Ans. It was the same.

Int. 7. While you were so employed by said Schoonmaker, did you know of any method or way of making more pictures than one upon the same plate; if yea, please describe every such mode, so far as to show any peculiarity or proceeding different from taking any picture.

Ans. I never practiced any method of making more than one on a plate while I was in his employ, that I now remember. My brother and I practised a method after I left Schoonmaker by two tubes, putting the plate in position to the sitter so as to expose two tubes at one time, instead of one tube; it makes in that way two pictures. But I don't think I ever practised that while with Schoonmaker; though I may have done so.

Int. 8. While you were engaged by Mr. Schoonmaker, as above stated, please state generally your duties, or your principal business?

Ans. My duties were those of a general operator, or workman at all parts of the business that was being done at that time.

Int. 9. Do you mean all parts of the business of taking pictures?

Ans. I mean all parts of the business of taking pictures, as we were making them at that time.

Int. 10. While so engaged by Mr. Schoonmaker, did you see or know of any mode of taking any more than one picture from the same plate, unless as you have already stated?

Ans. I don't think I did. It don't occur to me now that I ever did.

Int. 11. During the time you were so employed by Mr. Schoonmaker, or at any time previously, did he describe, or in any way
195 make known to you any mode of making more than one picture upon the same plate?

Ans. He did not, unless it may have been in the manner heretofore stated.

Int. 12. Please examine the exhibit now shown you, marked "Complainants' Exhibit Bride No. 1, E. G. T., examiner," and state whether while so employed by Mr. Schoonmaker, you saw a diaphragm in his place while you were engaged, resembling this exhibit; if yea, please describe the same, generally, and as accurately as you can, and state when it was, whether you saw it frequentlyor otherwise, and what, if anything, was done with it.

Ans. I can't remember now, that I ever saw a diaphragm of that kind, in the place while working for Mr. Schoonmaker; but after purchasing Mr. Schoonmaker's gallery of him, I remember coming across one in some manner or other; there were some old beams in the work-room, no ceiling over them; I found, to the best of my opinion, that diaphragm lying up there, waste, I suppose. It was like this in form, but I think larger, and made, I should think, of sheet iron or zinc, if I remember rightly.

Int. 15. When did you purchase Mr. Schoonmaker's gallery?

Ans. I took possession in the spring of 1857. I presume the bargain was made in the winter of 1856 and 1857.

Int. 11. Please examine the exhibit now shown you, and marked "Exhibit Irving, No. 3, E. G. T., examiner," and state whether the camera-boxes in use in the earliest years of your being engaged in taking pictures were of similar form.

Ans. That was the prevailing style of camera in use at that time, except that there were no holes cut in the bottom; otherwise they were the same.

Cross-examination by counsel for defendants.

Cross-int. 1. State, as nearly as you can, how long it was before you took possession of the business of Mr. Schoonmaker that you completed the purchase of the same, or negotiated for the purchase of it?

Ans. It must have been in the neighborhood of six months, I presume, previous to taking possession; I can't exactly tell.

196 Cross-int. 2. And what was your occupation during those six months?

Ans. That of general operator for Mr. Schoonmaker.

Cross-int. 3. Are you the William W. Wood who, with your brother John, composed at that time the firm of Wood Brothers?

Ans. Yes, sir.

Cross-int. 4. Were the terms of the sale a round sum for the business, stock, materials, and fixtures as they stood?

Ans. Yes, sir; I bought the concern just as it stood.

Cross-int. 5. Was there any inventory made at or before the time of the purchase or sale of the stock, materials, and fixtures?

Ans. None that I know of.

Cross-int. 6. Was any such inventory delivered to you?

Ans. No, sir, it was not.

Cross-int. 7. Have you ever carefully examined each and every of the contents stowed away in that establishment since your purchase of the same?

Ans. I cannot say that I have, the entire amount of the debris that was accumulated, and had been for years.

Cross-int. 8. When did you find the diaphragm referred to in your answer to the 12th question? (Question read.)

Ans. That must have been in 1857 or 1858. I can't remember exactly.

Cross-int. 9. What has become of it?

Ans. I do not know.

Cross-int. 10. Did you ever see it after that time?

Ans. I think that was hanging in my brother's and my work-room, on a nail, at the time I sold out my interest to my brother, in 1866.

Cross-int. 11. Did you ever use the diaphragm, or one like it?

Ans. I did not, for the purpose of making pictures.

Cross-int. 12. If I understand you correctly, you have never practised, up to the time you and your brother purchased the business from Schoonmaker, any method of making more than one picture on a plate, except by the method of using two tubes; am I correct?

197 Ans. That is correct.

Cross-int. 13. Did you ever practice any other method than that by two tubes of taking more than one picture on a plate, while you were in businees with your brother?

Ans. I think I did.

Cross-int. 14. Please describe the mode you so practised.

Ans. We done it, if at all, by means of a plate-holder which held the plate being slid part way, one-half of the plate being exposed, and after the exposure of that half of the plate, sliding the plate along to expose the other half.

Cross-int. 15. How soon was this after you had purchased the business from Schoonmaker?

Ans. It might have been a year or it might have been two years; I can't tell. We practised making them at first after I purchased from Schoonmaker with two tubes, and afterwards I think we got the box that made two pictures with one tube that I have spoken of.

Cross-int. 16. From whom did you purchase that box?

Ans. From either N. E. Sisson or Seth Parsons to the best of my remembrance; I can't tell which.

Cross-int. 17. Was that box any different in its construction from the boxes you had; and, if so, how did it differ?

Ans. It differed from boxes having only one tube in every respect;

the front was not like them; it was a square box with a square front instead of a bevelled front; the front piece had a slide to it that would slide out, that the tube was attached to; the back part was different; instead of putting the plate-holder into the top of the camera-box as in Exhibit Irving No. 3, we slid it on the back part of the box, exposed one-half of the plate, and then slid the plate along and exposed the other half, which made two pictures with one tube.

Cross-int. 18. When you sold out your interest to your brother in 1866, did he take possession of the shop and all its contents?

Ans. He became the entire possessor of the gallery and all its contents.

Cross-int. 19. Was any inventory made at that time of the contents of the gallery?

198 Ans. There may have been, but I think not; I don't remember positively.

Cross-int. 20. Did you make any inventory yourself?

Ans. I don't think I ever did.

Cross-int. 21. Did you ever compare any inventory of the contents of the gallery with such contents yourself?

Ans. I never did.

Direct examination resumed:

Int. 1. How did the length of the box you have just attempted to describe compare with the length of the boxes you have previously used? Compare it, if you please, in this respect, I mean as to its length, with boxes you previously used to make pictures of similar size.

Ans. I take the size Exhibit Irving No. 3; I think that the box when the bellows were closed would be three-fifths the length of this box, and when the bellows was drawn out to the fullest extent it would form a box, I should say, one half larger than this one.

Int. 2. In attempting to describe the box, did you not inadvertently omit referring to the bellows? If so, please describe that and the practical working of it.

Ans. I did omit speaking about the bellows; the use of the bellows was to do away with the inside box of the old style; that is, instead of having a box within a box to make length, the bellows accomplished the same purpose in a better manner.

Int. 3. And was this bellows across the central portion of the box?

A. It was as though the box was cut in two and a bellows put in between the pieces; the bellows was united to the two parts of the box joining them.

Int. 4. Have you any recollection as to the time or even the year when you first saw such a bellows camera-box?

Ans. I have no definite recollection.

WILLIAM W. WOOD.

Subscribed and sworn before me this 24th day of February, 1876.

WILLIAM LANSING, *Examiner.*

199 *Deposition of Richard S. Lobdell.*

ALBANY, *February* 25, 1876.

Direct examination by J. S. ABBOTT, Esq., of counsel for complainants.

Int. 1. Will you give your name, age, residence, and business?

Ans. My name is Richard S. Lobdell; age is fifty-two years; am superintendent of the gas-light company; reside in West Troy, Albany County.

Int. 2. Are you acquainted with James Irving? If yea, how long have you been acquainted with him?

Ans. Yes, sir; think I must have been acquainted with him in the neighborhood of thirty years.

Int. 3. Did said Irving ever take any daguerreotypes or other pictures of you? If yea, please state as accurately as you can, how many, when, and where.

Ans. Yes, sir. I think the first ones he ever took of me was in the village of West Troy. I think he took of me in the city of Troy; how many he took I couldn't say.

Int. 4. Please to produce such pictures as you can that were taken by him, and state as accurately as you can when and where each one was taken.

Ans. That is a picture (now produced) that was taken in the village of West Troy. I should think it was either twenty-nine or thirty years ago that that picture was taken. I can't swear positively; never charged my mind particularly with it. His evidence ought to corroborate it. He could tell better of the time he had his studio there. It can't be far out of the way for it was taken before I was married, and I was married about twenty-seven years ago. It must have been taken a year or two before I was married. I am unwilling to part with the custody of the picture. He took locket pictures of me at the time he was there; he certainly took one and I don't know but more.

Int. 5. Have you any other pictures of yourself with you? If yea, please produce it for inspection and state according to your best recollection when and by whom it was taken.

200 Ans. I have a picture of myself with me taken at a subsequent time, but am not willing to swear positively it was taken by Irving. The features show it was taken some years later. I am unwilling to part with the picture which I now produce.

Int. 6. Can you produce, or do you know where any locket picture of yourself is, taken by Irving?

Ans. I cannot produce it, nor do I know where it is.

Int. 7. At the time when said Irving took any picure of yourself, were two pictures taken upon the same plate?

Ans. My mind is not sufficiently clear to swear positively to that one way or the other.

(It is here admitted that the last picture produced has stamped upon the brass mat as follows, "Hutchings, 396 Broadway, N. Y."

It is also admitted that the witness Lobdell is the same person referred to in Richard Irving's testimony.)

Cross-examination by counsel for defendants:

Cross-int. 1. Did you at any time when said Irving was engaged in taking pictures of yourself, use any expressive language to him, and, if so, for what reason? Answer as briefly as you can.

(Question objected to as incompetent and inadmissible in cross-examination.)

Ans. I spoke in pretty strong terms to him for the length of time he kept me sitting in the sun for the taking of the picture. I thought it was unnecessarily long. It was a hot day, and it gave me a nervous sick headache.

Cross-int. 2. Did said Irving explain to you why he had kept you sitting so long, and, if so, what explanation did he give?

(Objected to same as above.)

Ans. It was a general explanation that some would take sooner than others, but that it was necessary generally to sit about so long in order to make a proper picture.

R. S. LOBDELL.

Subscribed and sworn to before me this 25th day of February, 1876.

WM. LANSING, *Examiner.*

201 I, William Lansing, examiner, duly appointed by the circuit court of the United States for the northern district of New York, do hereby certify that on the several days named in the depositions hereto annexed I was attended at my office in the city of Albany, in said northern district, by the counsel and witnesses aforesaid; that the said witnesses were severally duly sworn and examined, and their depositions were reduced to writing and read to them respectively and by them respectively subscribed in my presence.

WILLIAM LANSING, *Examiner.*

ALBANY, *February* 25, 1876.

Deposition of John H. Hallenbeck.

BOSTON, *March* 4, 1876.

Direct examination by J. S. ABBOTT, Esq., of counsel for complainants.

Int. 1. You have already testified in this case, have you not?

Ans. Yes, sir.

Int. 2. Please look at "Exhibit Irving No. 3," and state whether, while you were in Albany, you ever saw a camera with a hole cut in the bottom, as shown in this exhibit; or whether you ever knew or heard of pictures being taken while you were in Albany with the use of a camera with a hole cut through the bottom?

Ans. I don't remember of ever having seen a box of that description. I don't remember of having heard of one with a hole cut through the bottom of it.

Int. 3. If you had seen such a box and seen pictures, more than one on a plate, made by sliding the plate through the hole, would you or not have been likely to have remembered it?

Ans. I don't think I should unless there was something connected with it to enable me to remember it; it was quite a number of years ago.

202 Int. 4. While at Meade Brothers', in Albany, did you know of pictures being taken, more than one on a plate, of a woman in a state of nudity?

Ans. Yes, sir.

Int. 5. Please refer to your answers to int's 8, 9, and 10, complainants' printed record, folios 554–557, and say whether the pictures referred to in your last answer are the same to which you refer in the said printed record?

Ans. The nude pictures? Yes, sir; I suppose that is the reason why I remember it.

Int. 6. Was Mr. James Irving in Meade Bros.' employ at that time? Do you remember of his speaking about those pictures?

Ans. Yes, sir; he was working there then. I remember his speaking about those pictures.

Int. 7. While you were in Albany did you see, know, or hear of any camera-box used for taking pictures with any contrivance such as shown on "Exhibits Irving 1" and "Irving No. 2" for sliding the plate or plate-holder at the rear end of the camera?

Ans. I don't remember of it.

Cross-examination by counsel for defendants:

Cross-int. 8. Did you do anything more in reference to the nude picture of which you have testified than you have previously testified on cross-examination that you did with any other picture taken while you were at Meade's; and, if so, what?

(Complainants' counsel requests that the witness be permitted to read, or have read to him, the cross-examination referred to before answering this question.

Defendants' counsel hands witness a printed copy of his cross-examination.)

Ans. My impression is that I blacked the slides for that picture. I have been thinking about it since.

Cross-int. 9. Did you do anything else in connection with that picture?

Ans. Don't remember of having done anything else?

Cross-int. 10. Were you present in the room while the picture was being taken?

203 Ans. Not in that particular room; there were two rooms—one leading into the other.

Cross-int. 11. How many pictures were taken of this nude woman, if you know?

Ans. I don't know.

Cross-int. 12. Were there more than one?

Ans. Yes, sir.

Cross-int. 13. Were there more than two?

Ans. Yes, sir.

Cross-int. 14. Were there more than four?

Ans. That I couldn't say.

Cross-int. 15. Were they all of a size?

Ans. They were all on the same sized plate; I couldn't state the size of the picture.

Cross-int. 16. Because you did not take them or assist in taking them, was that the reason?

Ans. Yes, sir.

Cross-int. 17. Then what is the reason?—because you did not see them afterwards?

Ans. I couldn't tell, because I wouldn't know whether Mr. Meade moved his camera nearer to the subject unless I was there to note the circumstance and had my attention called to that part of it.

Cross-int. 18. Then you did not see the pictures after they were taken, did you?

Ans. I saw them; yes, sir.

Cross-int. 19. Then if you saw them why can you not state the size of the different pictures?

Ans. It would be impossible for any one to state the size at this day even if he saw them.

Cross-int. 20. Then you are not certain you saw them or not, are you?

Ans. Yes, sir.

Cross-int. 21. Please describe the picture and the position of the woman.

Ans. It was a picture of a naked woman standing in different positions for a certain purpose.

204 Cross-int. 22. How many different positions?

Ans. I don't know.

Cross-int. 23. Can you describe any one of them?

Ans. No, sir.

Cross-int. 24. In your answer to cross-int. 8 you say: "I have been thinking about it since." What has called your attention to this matter since you gave your deposition?

Ans. Having been questioned in relation to the number of pictures on a plate, and remembering this particular instance, I was reminded of certain things that happened at the time and afterwards.

Cross-int. 25. How often have you seen Mr. Wing since your previous deposition? Frequently or otherwise?

Ans. Quite frequently.

Cross-int. 26. And talked with him about this matter?

Ans. I have asked him how the case was coming on once or twice when I have seen him.

Cross-int. 27. Anything more?

Ans. No; not that I think of.

Cross-int. 28. Did you not tell him what you remembered, as you have testified to-day?

Ans. No, sir.

Cross-int. 29. Had no conversation with him as to your testimony of to-day?

Ans. No, sir.

Cross-int. 30. You have testified you have seen him frequently since your previous deposition; will you swear positively that you have had at those meetings no general conversation about this case, and your memory of what occurred while you were at Meade Bros.'?

Ans. In regard to my memory as to what occurred at Meade Bros.' I am very positive I have not; I might have said something about the case—might have asked him some questions or something about it—nothing particular that I remember of.

Cross-int. 31. Then all your thinking about it since your previous deposition only adds to the testimony you then gave—the impression that you blacked the slides of the nude picture—is it?

205 Ans. That's all, with the exception that it has revived my memory of some little things connected with that picture.

JOHN H. HALLENBECK.

Deposition of Albert S. Southworth.

BOSTON, *March* 4, 1876.

Direct examination by J. S. ABBOTT, Esq., of counsel for complainants.

Int. 1. Were you present in New York when the testimony of James Irving, William Rablen, James Hinds, and Hugh Guyer was taken in this case, and have you read the printed record of their testimony, and examined the exhibits therein referred to?

Ans. I was present, and have examined their testimony, as appears in the record, and am familiar with the exhibits referred to.

Int. 2. Is it possible to take a picture of the human face with either of the exhibits marked "Exhibit Irving 1," "Exhibit Irving No. 2," and "Exhfbit, Irving No. 3," with the plate-holder on the end opposite the lens, as stated by Irving; and if not, why not?

(Objected to as incompetent and irrelevant.)

Ans. With the lenses appropriate for those exhibits, it is not possible to arrange the focus so as to form an image of anything more than a very small portion of a face, and that portion of an extravagantly large size, behind the rear extremity of the end. "Exhibit Irving No. 3," is a working camera, made so that the plate shall be inserted from the top, in the middle of the box, by opening a lid from the top. The position of the plate may be changed by the slide within the box, attached to the rear beveled end of the box, and adjustable nearer the lens, or more distant, at pleasure. The usual focus of a lens suitable for this exhibit might be from three and one-half to five inches; that is, the plate should stand not less than about three and one half nor more than five inches from the lens. When the plate is drawn away from the lens eight or ten inches, or a foot, the lens must be car- 205½ ried nearer the sitter to obtain a distinct focus; and, of course, the image is necessarily enlarged and becomes life size, or nearly so. "Exhibit Irving No. 3," is not adapted to a lens of much shorter focus than the ordinary fourth-size lens, nor is it convenient to use a size much larger than the fourth size, and is universally known among photographists as a quarter-plate camera. Though plates smaller than quarter size may be inserted in frames and appliances adapted to smaller sizes, yet no larger than fourth sizes can be used in the camera at all. I mean by the last sentence, as ordinarily constructed, salable instruments.

Int. 3. Please describe, if you know, the cameras in use at or about the times when said Irving testifies he made more than one picture on the same plate, in the manner stated in connection with the said three exhibits.

Answer. "Exhibit Irving No. 3," and "Exhibit 2*a*," are, in their forms, without the sliding part attached to the bevelled end, like the cameras of that perod, ranging from 1845, '6, or '7, ten or fifteen years. Not many in those days had the slide attached to the bevelled end, or had any slide whatever; but there were two or three different sets of rabeted edges as fixtures inside the box, seen and used by opening the lids on the top, the same as seen by opening the lids in "Exhibit, Irving No. 3," or "Exhibit 2*a*," the rabeted edges being attached to the sides of the camera inside.

Int. 4. How many different sizes of cameras were in use at the times referred to; and how called or designated?

Ans. There were four regular sizes. The largest like No. 2*a*, in its outward form with bevelled ends for a plate 6½ x 8½ inches, called a full size or 4 x 4 camera. The next size was called a half-plate camera, and was adapted to the whole plate cut in halves, and was called a half plate or 2 x 4 instrument. The third size is the "Irving No. 3" exhibit, called a quarter-plate camera. The fourth size was called a sixth-plate camera; that is, a whole plate being cut into six parts; one part was the largest plate used in it.

Int. 5. Is it possible to make a full picture of the human face, using either one of the last-named two cameras you have described or 206 referred to in your last answer, if you have the plate on which the picture is to be taken at the rear end, or the end opposite the lens, as described by Irving; and if not, why not; if you have any additional reasons?

Ans. It is not possible. The reasons I have given in a former answer, but would add it is because the focus of the instrument would be much too short.

Int. 6. Suppose daguerreotye pictures were taken, two on one plate, when cut apart how would the plates compare in appearance with plates on which single pictures have been taken?

Ans. The ordinary plate had the edges bent or turned away from the face on four sides usually. A single exposure of that plate to light and the after development of the picture would show upon the margin the rests or ledge upon which the plate rested, while being covered with iodine, or in the development of the picture over the mercury bath. A plate divided would show the surface at the division on a level, while the ends and sides of the original plate would show the bevelled edge or polished side where it was turned down. The cut edge would be very sharp at the edge, and not polished off. It would be very apparent to an ordinary observer whether a daguerreotype plate had been cut at all, after carrying it through the various manipulations necessary to finish a picture.

ALBERT S. SOUTHWORTH.

Deposition of Simon Wing.

BOSTON, *March* 4, 1876.

Direct examination by J. S. ABBOTT, Esq., of counsel for complainants.

Int. 1. Were you present in New York at the taking of the testimony of James Irving, William Rablen, James Hinds, and Hugh Guyer?

Ans. I was.

Int 2. Have you attempted to make pictures, using the exhibits
introduced by said Irving, and marked "Exhibit Irving 1," "Ex-
206½ hibit Irving No. 2," and "Exhibit Irving No. 3," using them
in the manner testified by him?

(Objected to as immaterial, irrelevant, and incompetent.)

Ans. I have.

Int. 3. When?

Ans. This morning.

Int. 4. In whose presence?

Ans. John H. Hallenback's.

Int. 5. Whose picture did you attempt to take?

(Objected to as immaterial, irrelevant, and incompetent.)

Ans. His picture.

Int. 6. Referring to said "Exhibit Irving 1," please state what you did with, or to that exhibit, preparatory to taking the said picture.

(Same objection as before.)

Ans. I screwed a lens attachment to the front board, placed a lens tube therein, and added a cover with a wooden button attached to the plate-shield, so that I could keep my prepared plate in position to make the experiment.

Int. 7. State whether the lens attachment, tube and lens, corresponded with the hole or orifice made for it in said exhibit.

(Same objection as before.)

Ans. It did.

Int. 8. If you have the result of your attempt to take the picture, using this picture as above, please produce it.

(Objected to as above.)

Ans. I have it, and produce it.

(Picture produced and marked "Exhibit 1*a*, J. G. S., examiner.")

Int. 9. Please state whether you made your best efforts to obtain a good picture with the use of the said exhibit.

(Same objection, and further objection that such efforts would be adverse to his own interests.)

Ans. I did.

Int. 10. State whether it is possible, in your opinion, by the use of said "Exhibit Irving 1," in the manner and with the appliances described by said Irving in his testimony, to take two full pictures of a human face upon the same plate.

(Here follow photographs, marked page 207.)

208 (Same objection, and also on the ground that Irving has not testified that he used said exhibit in taking pictures; said exhibit is only a model of what he did use.)

Ans. It would not be of any human face I ever saw.

Int. 11. I now call your attention to "Exhibit Irving No. 3." Please state whether this exhibit is in form and proportion, including the orifice for the lens tube, and in size also, like such as were in common use from twenty to thirty years ago.

Ans. It is.

Int. 12. Have you a larger camera such as were in common use from twenty to thirty years ago? If yea, please produce it?

Ans. I have, and produce it.

(Camera marked Exhibit 2*a*, J. G. S., examiner.)

Int. 13. Where did you obtain it, and have you made any change in it, or addition to it; and, if yea, what?

Ans. I obtained it in Albany, N. Y.; I have put some pieces to it that were missing, comprising one of the covers, and the narrow piece the cover is hinged to.

Int. 14. Please produce the result, if you have it, of your attempt to take two pictures of said Hallenbeck on the same plate, using Exhibit Irving No. 2.

(Objected to as immaterial, irrelevant, and incompetent.)

Ans. I produce it.

(The picture produced is marked Exhibit 3*a*. J. G. S., examiner.)

Int. 15. And in taking this picture state whether you made use of a lens-tube and lens, and other appliances adapted to said Exhibit Irving No. 2?

(Objected to as before.)

Ans. I did.

Int. 16. Whether or not you attempted and used your best efforts to obtain good and full pictures of said Hallenbeck's face, with this exhibit?

(Same objection as to int. 9.)

Ans. I did.

209 Int. 17. State whether, in your opinion, it is possible to obtain good pictures of one's face, with such apparatus as Exhibit Irving No. 2, and having the plate in the position relatively as to the lens, as shown by said exhibit, and as testified by said Irving.

(Same objection as to int. 10.)

Ans. It is impossible.

Int. 18. If you have the result of your attempt to take two pictures of Hallenbeck with Exhibit Irving No. 3 please produce it.

Ans. I have, and produce it.

(Picture referred to marked Exhibit 4*a*, J. G. S., examiner.)

Int. 19. In your attempt to take the picture referred to in the last question, state whether the lens-tube and lens were of the size adapted to the hole or lens orifice in said exhibit.

Ans. They were.

Int. 20. If you have the attachments or apparatus which you adapted to the opposite end of Exhibit No. 3, will you produce them?

Ans. I do produce them. (The apparatus referred to is marked Exhibit 5*a*, and Exhibit 6*a*, J. G. S., examiner.) And I also used in all of the experiments the plate-holder and slide which Irving produced and referred to in connection with his exhibits. I also used in my experiments Exhibit 7*a*, J. G. S., examiner, being frame containing the ground glass, such as is generally used in taking pictures.

Int. 21. Are the several lenses and lens-tubes which you used in your experiments now in these three Irving exhibits?

Ans. Yes.

Int. 22. In attempting to take Hallenbeck's picture, resulting in Exhibit 4*a*, state whether you used your best efforts to obtain a good and full picture of his face.

(Same objection as to int. 10.)

Ans. I did.

Int. 23. State whether, in your opinion, it is possible to take a full picture of one's face, with the use of a camera-box like Exhibit Irving No. 3, or with the use of such camera as referred to by Irving in his testimony, having the plate-holder on the rear end of

(Here follows photograph marked page 210.)

211 the camera, or at the end opposite to the lens, in the manner described by him, or in any way of which you have any knowledge?

(Objected to as irrelevant and immaterial.)

Ans. It is impossible to make a full picture of a person's face with either of these exhibits, Irving 1, 2, and 3, when the plate-holder is placed in the rear end of the camera boxes; and I answer the whole question in the negative.

Int. 24. Were you present in Albany last week, when the testimony of Messrs. Sellwood, Wood, and Lobdell was taken?

Ans. I was.

Int. 25. Was said Irving present also; and, if yea, did he confer with defendants' counsel?

Ans. He was present, and did confer with counsel.

Int. 26. I now call your attention to the two pictures of said Lobdell, which were produced by him, and which he refused to part with; please state whether you then, and also previously, carefully examined those pictures, and the plates on which they were made.

(Objected to as irrelevant and immaterial and inadmissible, as said pictures are not in evidence, and any comparison or interrogatory concerning them should have been pursued at the time of introduction; and counsel gives notice he will move to strike out any testimony in regard to them.)

Ans. I did examine them then, and also previously.

Int. 27. Of what material were the plates made?

(Objections and notice continued.)

Ans. Copper and silver.

Int. 28. I now call your attention to the 71st cross-interrogatory and answer of said Irving, fols. 576 and 577 of the printed record. Now, suppose two pictures made on one plate, as there stated, and one put into a locket and the other into a case, would there be any apparent difference; and if so, what, in those plates as compared with plates on which one picture had been taken?

(Objected to as irrelevant and immaterial.)

Ans. I have examined the question and answer referred to; there would be a difference. A plate with one picture made on it would show the whole margin alike where prepared and exposed to
212 the chemicals, and where the edges were prepared to fit the polishing block while being polished. If such plate should be cut in two pieces the parts where divided would show that it had not been covered by the rab'et or frame, as in whole plates not cut.

Int. 29. How was it with each of the plates having the pictures produced by Lodbell, and referred to above? State whether either of them was, or had been cut, or whether each exhibited the appearances described above, showing it to have been a single picture when taken.

(Same objection as to int. 26, and further, that of the pictures produced by said Lodbell he identified but one of them as having been taken by Irving, and did not identify that one as being the one referred to by Irving in answer to cross-interrogatory 71, defendants' record, fol. 577.)

Ans. They were regular size as bought in the market, and were never cut after they had been through the preparation and exposed to the image; and they exhibited all the appearances of being single pictures when taken.

BOSTON, *March* 6, 1876.

Cross-examination by counsel for defendants:

Cross-int. 30. What do you understand to be the focal length of a lens?

Ans. That point where the image falls when the lens is pointed to the sun, or a very distant object.

Cross-int. 31. You say that the focal length of a lens is "that point"; why is the word length used in speaking of a lens, respecting its focal distance?

Ans. The length, or space, or distance between the lens and the point where the rays are brought together, is what I mean by the length of focus of a lens.

Cross-int. 32. Then which do you mean, the distance or the point, in answer to cross-question 30?

Ans. I mean when I speak of a lens being 4-inch focus, or 8-inch focus, &c., that the space between the lens and the image-glass is four inches or eight inches, according to the shape of the lens.

213 Cross-int. 33. Then what do you really understand to be the focal length of a lens; is it a point, or distance, or space, as you have severally stated in your previous answers?

Ans. It is a distance measured by inches.

Cross-int. 34. Then you mean, do you not, that the focal length of the lens is the distance between the lens and the place at which it forms a sharp image of a very distant object?

Ans. I think lenses are measured by holding them so that the sun will shine on them, and where the rays of light are brought to a sharp point or smallest point—that is, the distance between the point and the lens—is what we would reckon the length of focus of a lens.

Cross-int. 35. Is this, in your opinion, the most accurate way of determining the focal length of a lens?

(Objected to as inadmissible at this stage of the examination.

Counsel for defendants states that the witness having added lenses to the defendants' exhibits, and thereafter experimenting with them, it is deemed important to discover the witness' knowledge of lenses and their uses.)

Ans. It is my opinion it is a very accurate way; but if it was possible to direct the lens at an object at a much farther distance than the sun, the focal measurement would be in fact less, but so little it would be difficult to measure it; but the sun focus is considered near enough for practical purposes.

Cross-int. 36. Would there be any appreciative difference between a sun focus and that of a more distant object?

(Objected to as before.)

Ans. I never tried it to see. I should think it would be very difficult in finding the difference.

Cross-int. 37. Is the sun a very distant object?

(Objected to as before.)

Ans. It is considered so—over ninety millions of miles.

Cross-int. 38. Is this sharp or smallest point, mentioned in your answer to cross-question 34, an image of the sun?

Ans. Yes; I think that would be an answer to the question, if I understand it.

214 Cross-int. 39. Question repeated.

Ans. Yes.

Cross-int. 40. Is not, then, the focal length of the lens the distance between the lens and the image it makes of a very distant object?

(Objected to as before.)

Ans. Yes.

Cross-int. 41. Is this distance constant for each lens?

(Objected to as above.)

Ans. It would be if the lenses were all ground the same shape, and the object or the sun was the same distance from the lens, if I understand this question. After a verbal explanation I answer that a four-inch focal lens or any other length of lens would remain the same so far as describing the lens.

Cross-int. 42. Will the distance at which a lens produces a sharp image of an object not very distant, like the sun, be always the same?

(Objected to as before.)

Ans. The image of an object can be made large or small by the use of a lens, by carrying the image-glass nearer or farther from the lens, and the lens nearer or farther from the object.

Cross-int. 43. Question repeated.

Ans. No; it would vary in proportion as the object is distant or near the lens.

Cross-int. 44. Would it increase or decrease as the object approached the lens?

(Same objection as before.)

Ans. It would increase.

Cross-int. 45. Is the focal distance you have just spoken of the same thing as the "focal length" of the lens before defined?

(Objected to as before.)

Ans. Not in describing a lens. When we speak of a lens as being of a certain focal length we mean its shortest focal length. Where we focus an image on the image-glass of an object very near to the lens we call it the focus of the object.

Cross-int. 46. Question repeated.

(Objected to as before.)

215 Ans. It is the same thing, with the exception of the light on the image being distributed by distance from the lens.

Cross-int. 47. May this focal distance be varied indefinitely with the same lens?

(Objected to as above.)

Ans. It can, after passing the focal length of the lens.

Cross-int. 48. And you have already stated, have you not, that the focal length of each lens is invariable?

(Objected to as before, and because the witness has not stated that the focal length of a lens is invariable, excepting as used in describing a lens, or using the term focal length when taking the image of a very distant object, as the sun, or rather when having the rays of the sun, by means of the lens, converge to a point.)

Ans. I think I did not say they were invariable.

Cross-int. 49. Is the focal length of any given lens variable or invariable?

(Objected to, same as the 35th cross-int.)

Ans. We would generally say they were not variable, in describing them; still they could be placed where the glass would be softened or hardened by heat or cold sufficiently to vary the length of focus.

Cross-int. 50. Would the lens so changed by heat or cold be optically the same lens?

(Objected to as above.)

Ans. I should think it would; at any rate, if it should come back when it was cold in the same shape it was before it was heated it would be the same.

Cross-int. 51. Suppose a 6-inch lens should become by heat a 10-inch lens, would that be optically the same lens?

Ans. Not while it was a 10-inch lens.

Cross-int. 52. When would it be the same lens, optically?

(Objected to as before.)

Ans. When it is back to a 6-inch.

Cross-int. 53. Does what you have stated, then, show that the focal length of the same lens will vary?

(Objected to as before.)

216 Ans. They would not vary sufficiently to injure the practical use of them, and then return fit for use.

Cross-int. 54. Have you not stated that when the focal length of the lens was varied it was not the same lens, optically?

(Objected to as before.)

Ans. Yes.

Cross-int. 55. Are there, then, any conditions under which the focal length of the same lens, optically considered, can vary?

(Objected to as before.)

Ans. I said in my former answer they could, slightly.

Cross-int. 56. What are those conditions, then?

(Same objection as before.)

Ans. By heating and cooling, softening or hardening.

Cross-int. 57. Is a lens whose focal length is changed by "heating and cooling, softening or hardening," the same or a different lens, optically?

(Same objection.)

Ans. No.

Cross-int. 58. Are there then any conditions under which the focal length of the same lens, optically considered, can vary?

(Same objection.)

Ans. I think not.

Cross-int. 59. Is there any relation between the focal length of the lens and the size of the image it will produce, other things being equal?

(Same objection.)

Ans. I don't know as I understand the question.

Cross-int. 60. Suppose you have a lens of 6-inch focus and place it at a distance of 12 inches from a piece of ground glass and the same distance from a candle flame, how large will the image of the flame be? Would it be equal to that of the candle, or larger, or smaller?

(Objected to as before.)

Ans. It would be nearly the same size.

Cross-int. 61. If the candle is brought nearer to the lens, what effect will this have upon the distance and size of the image?

(Same objection as before.)

217 Ans. The size of the image would be larger, and the distance will be increased.

Cross-int. 62. If the candle were moved further off, what effect would this have upon the distance and size of the image?

(Objected to as before.)

Ans. The distance would be less, and the image smaller.

Cross-int. 63. Suppose, however, the ground glass were so fixed that it could not be brought nearer to the lens, will any change of distance from the candle enable you to make on it a smaller image than that first named as equal to the candle flame?

(Objected to.)

Ans. Not a distinct image.

Cross-int. 64. Now if you desire to make on said ground glass a smaller image of the candle, is there a way to do so, known to you?

(Objected to as above.)

Ans. No way except to move the candle farther from the lens, and bring the ground-glass and the back of the lens nearer together.

Cross-int. 65. What would be the effect of using or introducing a lens of greater focal length?

(Same objection as before.)

Ans. The candle would have to be carried still farther off, if a lens was used of sufficient long focus to reach the ground glass with the image without moving the ground glass.

Cross-int. 66. But if the candle was carried further off, would it not be possible to produce a sharp image smaller than the candle flame on the ground glass?

(Same objection.)

Ans. If the focal length of the lens introduced was short enough so that the candle flame could be focussed on the ground glass, making the image smaller than the candle flame, I could answer that by saying that it would depend on the focal length of the lens.

Cross-int. 67. Cross-question 65 and answer read to witness, and question repeated.

(Objected to as before.)

218 Ans. It would. I mean, supposing the ground glass remained 12 inches from the lens, and a lens was used of such focal length as to reach the ground glass.

Cross-int. 68. Is not the general principle involved in this familiar to all practical photographers, and put in practice daily in taking different sized pictures?

(Objected to as before.)

Ans. Yes, it is understood by a good many.

Cross-int. 69. Do you not understand it?

(Objected to as before.)

Ans. I think I do.

Cross-int. 70. Is it not a matter perfectly easy to calculate—with a fixed distance given between the lens and the ground glass—of what focus the lens must be in order to produce an image of the same size as the object on the ground glass?

(Objected to as before.)

Ans. Yes.

Cross-int. 71. Suppose the distance between the lens and the ground glass to be twelve inches, would not a lens of six inch focus give a sharp image of an object on that glass if the object were twelve inches distant from the other side of the lens?

(Objected to as before.)

Ans. I think it would.

Cross-int. 72. With the same lens (a six-inch focus), if the ground glass were a greater distance than twelve inches, will not a sharp image, larger than the object, be produced by bringing the object nearer?

(Same objection as before.)

Ans. Yes.

Cross-int. 73. Suppose a lens of three and one-half inch focus, with the groundglass seven inches distant from the lens, would not a sharp image be produced of an object seven inches on the other side of the lens?

(Same objection.)

Ans. I should think it would.

Cross-int. 74. Would not this image be the same size as the object?

219 Ans. Nearly so, I think.

Cross-int. 75. Now, if a lens of greater focal length were used, say of five inches, and the ground glass remained at the same distance as before, to wit, seven inches from the lens, would not a sharp image be produced on the ground glass if the object were removed sufficiently far from the lens?

(Same objection.)

Ans. Yes.

Cross-int. 76. Would this sharp image be smaller or larger than the object?

Ans. Smaller.

Cross-int. 77. Suppose you had a camera-box in which the distance between the lens and ground glass was fixed at about nine inches, can you not calculate that a lens of four and one-half inch focus or less would produce no image smaller than the size of the object?

(Same objection as before.)

Ans. Yes.

Cross-int. 78. Can you not also tell by calculation, that by using a lens of a greater focal length in such a camera-box, that you could produce an image smaller than the object, the object being properly placed as regards distance?

(Same objection.)

Ans. Yes.

Cross-int. 79. Will you please measure the distance between the lens and the ground glass in "Exhibit Irving 1"?

Ans. I have, and find it nine inches and a quarter.

Cross-int. 80. State, if you know, what is the focal length of the lens you have placed in that exhibit.

Ans. It is about four inches, I think.

Cross-int. 81. Please state the distance between the lens and ground glass in "Exhibit Irving No. 2," and also the focal length of the lens used by you in that exhibit.

Ans. About eight and one-half inches between the ground glass and lens, and the focal length of the lens is about four inches.

220 Cross-int. 82. Please state the distance between the lens and ground glass in "Exhibit Irving No. 3," and also the focal length of the lens used by you in that exhibit.

Ans. The distance is about ten and a quarter inches between the ground glass and the lens, and the focal length about four inches.

Cross-int. 83. And can you not tell by calculation that the lens used in these three exhibits would not produce pictures other than of the same size, or larger than the object; in other words, life-size pictures?

Ans. Yes.

Cross-int. 84. Is it usual in practice to take life-size pictures by the use of cameras of this size?

Ans. Not from life; only in copying.

Cross-int. 85. With the knowledge you have stated you possess, could you not have calculated what focal length of lens should have been used in these three exhibits to produce pictures in which the entire face or figure would be produced on each half of the plate?

Ans. Yes.

Cross-int. 86. Then why did you not do it and use such lenses?

Ans. Because the models were provided with apertures cut, and I could not obtain lenses such as we in practice use that could be inserted in the apertures. I selected those most favorable for producing the smallest image that the models would allow.

Cross-int. 87. Are not lenses made having greater focal length than four inches, of even smaller size than the apertures in those models?

Ans. Yes; but they are for another purpose, making views.

Cross-int. 88. Do you mean to state, or to be understood as stating, that all lenses of this small size, and having greater focal length than four inches, are view lenses, and unfit for portrait photography?

Ans. Yes. Lenses that are of much longer focal length, and of small size, work so slowly in a gallery that they are not used in practice, unless for copying.

Cross-int. 89. Do you mean to be understood as stating that there are no lenses in the market having a greater focal length than four inches, and of a size that could be used in these exhibits, "Irving 1, 2, and 3"?

221 Ans. I don't know of any longer focus lenses prepared for photographing the human face that are set in tubes that could be attached to these exhibits of this size. There may be a slight difference in lenses of the same size.

Cross-int. 90. Did you know of such lenses being in the market, or in use, at the time the boxes made like said exhibits were claimed to have been used by said Irving?

Ans. No.

Cross-int. 91. Do I understand you to say that lenses are made, having greater focal length than four inches, of as small and smaller size than the apertures in these exhibits?

Ans. Yes.

Cross-int. 92. And which could have been used in these exhibits by persons skilled in photography?

Ans. Yes; not from the human face, as it would take too much time.

Cross-int. 93. But it could be done, could it not?

Ans. It would not be practicable.

Cross-int. 94. Could it be done or not; and if not, why not?

Ans. It might possibly be done now, since the chemical preparations are more sensitive to light than they were in the early days of daguerreotyping, but it is not practised at the present day.

Cross-int. 95. Then, if it could be done, why did you not try to do it, especially when you have stated that your knowledge informed you that the use of a 4-inch lens, and boxes arranged like these exhibits, would only produce a life-size picture?

Ans. I used such lenses as we used in making pictures from life that were in use many years ago at the time the pictures were said to have been made, and such as we use at the present day for portraiture.

Cross-int. 96. Please look at "Exhibit Irving No. 3," and state where you exposed the plate which you took with that apparatus.

Ans. At the rear end of the box.

Cross-int. 97. Have you made any addition to the box said Irving testified about; and, if so, what?

Ans. Yes. I applied the apparatus which is marked Exhibit *5a*, being a slide or frame to hold the plate-holder in position.

222 Cross-int. 98. Was there any such frame attached to the box when Irving testified in regard to it?

Ans. No.

Cross-int. 99. Are you familiar with the testimony given by Irving in this case in reference to the construction, arrangement, and his mode of operation of said box?

Ans. Yes.

Cross-int. 100. In making the picture you have testified to as being made by the use of this box, did you follow the manner described by said Irving in his testimony respecting it?

Ans. I did not follow the process of making the pictures in the middle of the box, in making "Exhibit *4a*," in the manner as Irving describes he made with a box like "Exhibit Irving No. 3."

Cross-int. 101. Please take "Exhibit Irving No. 3," and with the ground glass placed in the position described by Irving for focusing pictures with that exhibit, and looking through it at a human face in focus, distant about five feet from the lens, state what the size of that face is upon the ground glass.

Ans. I think it is about an inch.

Direct examination resumed:

Int. 102. In procuring lenses in the market from dealers, to be used for taking photographic pictures or daguerrotypes, are lenses purchased separate from the tubes, or fitted to and furnished with the lens-tubes?

Ans. Fitted to and furnished with the lens-tubes.

Int. 103. And was it so at the times referred to by Irving in his testimony?

Ans. It was.

Int. 104. In making the Exhibits *1a*, *3a*, and *4a*, which you have testified you made in using "Exhibit Irving 1," "Irving No. 2," and "Irving No. 3," respectively, did you use lenses already fitted to the lens-tubes, and furnished for and procured with the tubes?

Ans. I did.

223 Int. 105. In making the Exhibit 4*a*, using "Exhibit Irving No. 3," please state whether you adopted and pursued the course described in Irving's testimony, which he adopted or described in connection with and illustrated by "Exhibit Irving No. 2."

(Objected to as irrelevant, Irving not having testified that he pursued any such course with "Exhibit Irving No. 3.")

Ans. I did.

Int. 106. State whether "Exhibit Irving No. 3" is such a box as was in common use at the time Irving testified.

Ans. It is.

Int. 107. And whether it is such a box as would correspond to Rablen's testimony?

Ans. It is.

Int. 108. State whether, at the times Irving and Rablen refer to in their testimony, camera-boxes of different sizes were used respectively with lens-tubes and lenses to correspond therewith; that is, would one size or description of box uniformly have the same size lens-tube and lens?

Ans. They did.

Int. 109. State whether the lenses and tubes used by you in making Exhibits 1*a*, 3*a*, and 4*a*, respectively, were with their lens-tubes suitable to be used, and such as would be sold by dealers to be used with such exhibits as "Irving 1," and with cameras corresponding in size with Exhibits "Irving No. 2" and "Irving No. 3," and having similar orifices for tubes.

Ans. They would.

Int. 110. During the whole of your cross-examination, state whether the defendants' witness, Dr. Morton, has been present; and whether the questions to you, or most of them, were prepared by him.

Ans. He has been present during the whole time, and I should say they were mostly or nearly all prepared by him, judging from appearances.

Int. 111. State whether many of them were written by him before being read by counsel.

Ans. To my best judgment he did write many of them; I wasn't near enough to him to read the writing.

224 Cross-examination resumed:

Cross-int. 112. Do dealers sell, and photographers buy, lenses with reference to the size of the brass mounting as compared with the holes which the carpenter may have made in the camera-boxes; or are lenses bought and sold with reference to the focal length of such lenses, and their fitness in that respect for the work which they are to perform?

Ans. Dealers sell, and photographers buy, lenses and boxes to fit each other, both made to do the kind of work the photographer wants to accomplish.

Cross-int. 113. Which is the important point of fitness, the relation of the focal length of lens to the depth of the box, or the size of mounting to that of the hole?

Ans. They must all fit in order to make them useful.

Cross-int. 114. If the plate had been exposed in "Exhibit Irving No. 3" in the middle of the box, as described by Irving, could it not have produced an image of the human face about an inch in size?

Ans. It could with the lens that is now on it.

Cross-int. 115. When a photographer finds his lens is of too short a focus to produce a good effect, does he ever unscrew and take out one of the elements, say the rear cell with its lenses, and so obtain a lens of longer focus?

(Objected to as inadmissible in recross, or at this stage of taking the testimony, and irrelevant.)

Ans. He could do it.

Cross-int. 116. If you so remove the rear lens of the combination, in "Exhibit Irving No. 2," will you then be able to get an image of the human face of a size of about one and one-half inches on the ground glass?

(Same objection as before.)

Ans. You would get an indistinct image, the size depending on the distance the object is from the ground glass; but it is not a practical processs.

SIMON WING.

225 *Deposition of Nicolas Pike.*

Direct examination by J. S. ABBOTT, Esq., of counsel for complainants:

BOSTON, *March* 11, 1876.

Int. 1. Please give your name, age, and residence.

Ans. Nicolas Pike; fifty-eight; Brooklyn, N. Y.

Int. 2. What practical knowledge have you had of photography, and of taking daguerreotype pictures, and of apparatus used in that business?

Ans. I have had a good deal of knowledge and practice.

Int. 3. Have you written upon the subject; and, if so, how extensively, and for how long a time?

Ans. I have written a good deal on photography at various times. I assisted M. A. Root, of Philadelphia, in his work on the art, entitled "The Camera and the Pencil." About the year 1855, or 1856, I published a pamphlet entitled "A Guide to Photography."

Int. 4. Have you been examined or given your testimony as an expert in relation to inventions relating to photography, either in patent suits, or in connection with the Patent Office at Washington?

Ans. I have, in both.

Int. 5. Please state, if you know, when the art of taking daguerreotypes was introduced to or known in this country.

Ans. I think, in 1839.

Int. 6. When did you commence taking such pictures?

Ans. I think it was in 1842 or 1843.

Int. 7. And have you been accustomed to take such pictures and photographic pictures from that time to the present?

Ans. I have.

Int. 8. Please state as to your knowledge in relation to cameras, lenses, and apparatus connected with taking of such pictures, which were in use or for sale in New York City and Albany, say from 1843 to 1856; I mean to enquire as to the extent of such knowledge possessed by you.

Ans. I was familiar with the instruments then in use, and had a general knowledge of them.

226 Int. 9. Have you been acquainted with Meade Bros., who once had a gallery or place for taking such pictures, in Albany, N. Y.?

Ans. I knew them very well.

Int. 10. When did you first become acquainted with them?

Ans. I think it was in 1842 or 1843.

Int. 11. And from that time until they moved to New York City, will you state the degree of your familiarity or intimacy with them, and whether you were in their gallery in Albany, and if so, how frequently?

Ans. I was frequently in their gallery and knew them very well. My business frequently called me to Albany, and I generally called to see them when in the city.

Int. 12. Please state whether you were in their gallery, in the room in which pictures were taken, and if so, about how often during that period?

Ans. My visits were as often as once, and sometimes twice a month. I had free access to every part of the gallery, that includes what daguerreotypists and photographers call the "dark room."

Int. 13. Whether or not at those visits, you saw the mode of taking pictures in that gallery, and the apparatus there used for that purpose, and whether or not the interviews between them and you as to the apparatus used and the manner of taking pictures there were free and unreserved, or otherwise? Please state fully.

Ans. I saw them used. The manner and the different processes of taking the pictures were unreserved to me.

Int. 14. Did you see or know of, or receive any information of there being more pictures than one taken upon the same plate, at Meade Bros., in Albany, during that period; I mean from 1842 until they moved to New York City; if yea, state when, to your knowledge or information, such pictures (more than one on the same plate) were first taken there. Describe the mode of their being taken, and the apparatus used.

Ans. I think it was either in 1844 or 1845 that Mr. Meade showed me a shield for taking more pictures than one on a plate. This was the first time it ever came under my observation. This shield was 227 used with the ordinary daguerreotype camera; that is the kind of camera I refer to, the one marked "Exhibit Irving No. 3." The shield had four slots, each slot had a slide; the camera was focused on the image to be taken, and the plate exposed by drawing the slide from the slot on the right of the shield. After the plate had been exposed, the slide was introduced and the shield removed from the camera. The camera was then focused again, the shield was introduced into the camera the second time, the second slide withdrawn and the plate exposed; and so on until the four pictures were taken.

Int. 15. During the period enquired about did you see or in any way obtain information of any other mode by which more pictures than one on the same plate were taken in that gallery? If yea, describe the same.

Ans. No, excepting the one described.

Int. 16. After Meade Bros. moved to New York, did you continue to be intimate with them?

Ans. I did.

Int. 17. State whether you communicated to them, or to either of them, a mode of taking more pictures than one on the same plate? If yea, when and where, and describe the method, and state what occurred at the time.

(Objected to as irrelevant, immaterial, incompetent, and inadmissible at this stage of the proceedings.)

Ans. I did; at their gallery in Broadway, New York; between the years 1851 or 1852, one of those years. I think in 1851, but am not sure. Mr. Meade heard of my having this shield, and sent his father to me for it. At that time I refused to give it to him, as I promised not to impart the knowledge to anybody. The shield was invented and communicated to me by Henry Fitz, optician, and John Johnson, jr.; they were early pioneers in this art, of the daguerrean firm of Wolcott & Johnson. The shield was made in the ordinary manner with the exception of an addition of an extra slide, with one exact quarter of this slide cut out. The plate, of ordinary size, was placed in the shield, and the inner slide with the quarter cut out, was also put in its place; then the outer slide covered the whole. On the 228 withdrawal of the outer slide, it exposed the surface or a quarter of the plate to the action of the light. After the taking of the first picture, the inner slide was removed, turned, and inserted in its place. This was repeated until the four pictures were taken.

Int. 18. Between the taking of these several pictures was any change or movement of the camera made?

Ans. There was.

Int. 19. Would these pictures be severally taken in the axial focus of the lens?

Ans. They would not be.

Int. 20. Did you in fact communicate to Meade Bros., or either of them, at or about the time referred to, this mode of taking four pictures on one plate?

Ans. With Mr. Fitz's consent, I did. I went there myself and worked it for him, showed him how to do it.

Int. 21. What occurred between you and the said Meade at the time you so did?

Ans. Mr. Meade was delighted with the knowledge I imparted to him, that is, was very much pleased, as much so as I was, when I first got it.

Int. 22. State whether, to your knowledge, that mode of taking four pictures was thereafterwards used in their gallery, in New York?

Ans. It was; about that time, and afterwards, generally used.

Int. 23. Were you intimately acquainted with the above-named John Johnson, jr.?

Ans. I was very intimate with him, experimenting with him a great portion of the time.

Int. 24. During the time you frequented the gallery of Meade Bros., in Albany, say from 1843, until they moved to New York City, state whether you saw said Johnson in their gallery at Albany. If yea, how frequently?

Ans. I do not recollect of meeting him, not there.

Int. 25. While said Meade Bros. were in Albany, and after you became acquainted with them, were they communicative with you, or reserved, in relation to their mode of taking pictures and their apparatus used?

229 Ans. They were very free and open.

Int. 26. Have you examined the printed record in this case of the testimony of James Irving, William Rablen, James Hinds, and Hugh Guyer, and the exhibits therein referred to?

Ans. Yes, I have.

Int. 27. Please refer to folios 541–543 of said printed record, and to "Exhibit Irving 1," therein referred to, and state whether, with cameras and lenses then in use in this country, it was practicable to take pictures of living persons with the plate-holder at the rear end of the camera, and in the manner described by said Irving; and please give your reasons for your answer.

(Objected to, as said "Exhibit Irving 1" is not a camera, and was not put in evidence as a working model.)

Ans. It was not practicable, decidedly not. Such cameras, then in use, that came under my observation, and such lenses as were used on such cameras, were constructed in such a manner that it would have been impossible, in my opinion, to make pictures as specified in the testimony referred to. Even if it had been possible, the process would have been so slow that it would have been impractical in portraiture.

Int. 28. I now refer you to "Exhibit Irving No. 3," and "Exhibit *2a*." Please state whether they are specimens of such cameras as were in general use in 1845. I of course exclude from your consideration the hole recently cut in the bottom of "Exhibit Irving No. 3."

Ans. They are, with one intermediate size.

Int. 29. Was the one of intermediate size similar in form, construction, and proportion to these two?

Ans. Yes.

Int. 30. State whether, during the period before spoken of, while you were frequently in the said gallery of Meade Bros., in Albany, the cameras there used were like these two exhibits and the one of intermediate size you have referred to?

Ans. They were.

Int. 31. Did you see in their said gallery at Albany any camera differing from the three above referred to by you?

230 Ans. I did not.

Int. 32. Did you in any way obtain information that there was in use in that gallery, in Albany, during the time referred to—I mean from your first acquaintance with it until Meade Bros. removed to New York City—any camera differing from the three above referred to by you?

Ans. No, sir.

Int. 33. Did you know, or in any way obtain information, that during the period referred to there was ever used in that gallery any camera with a hole cut in the bottom, as illustrated by "Exhibit Irving, No. 3," or any camera with any contrivance on the end opposite the lens, by which the plate-holder or shield was placed or used at such rear end as illustrated by "Exhibit Irving No. 2," or any camera with a moveable lens, or any camera with the division in the middle as illustrated by "Exhibit Irving 1"?

Ans. I did not.

Int. 34. Did you ever see or in any way know or obtain information of the*ir* having been used in the gallery of said Meade Bros. in New York City any camera with such a hole cut, or with such contrivance, or with such moveable lens, or with such division as referred to in the last interrogatory?

(Objected to as not in answer or rebuttal of any testimony of the defendants, no testimony having been offered in reference to the apparatus and processes employed by Meade Bros. in the city of New York.)

Ans. No.

Int. 35. Did either of said Meade Bros. ever give you any information, or allude to any camera with such alteration or contrivances as referred to in the last two interrogatories?

Ans. No, sir.

Int. 36. If any camera had been used in their said gallery in Albany after you became familiar with it, and before they moved to New York, having such hole cut in the bottom, or such moveable lens, or with a contrivance by which a plate-holder was used at the rear end of the camera, would you, in your opinion, have known of it, or have been informed of it by Meade Bros.?

231 Ans. I should think so.

Int. 37. I now invite your attention to folios 544–547 of defendants' printed record and to "Exhibit Irving No. 2," therein referred to, and please state whether, with cameras and lenses in use in this country at the times referred to by said Irving, it was practicable to take pictures of living persons with the plate-holder at the rear end of the camera, and in the manner described by said Irving, and please give your reasons for your answer.

Ans. I should say it was not practicable with the cameras then in use that came under my observation. There may have been some and I not have seen them. In the first place, lenses used for portraiture were of small size, known as the quarter tube, with a visual focus of about 4 inches, 4 to 5, and this exhibit is about 10 inches—I should say 10 or 11; and in my opinion it would give a distortion or enlargement of a sitter, or a person sitting for a picture, placed in the ordinary position practiced by photographers.

Int. 38. For what size camera is the quarter-size lens adapted?

Ans. The size of "Exhibit Irving No. 3."

Int. 39. In your answer to the 14th interrogatory, you describe a mode of taking four pictures on the same plate in the gallery of said Meade Bros., in Albany. Please state whether by the same or a similar mode a larger or a smaller number than four were taken on the same plate.

Ans. He could take any number from one to four with the slides that I described.

Int. 40. And would it be practical to increase the number of slots and slides, and thus to take more than four pictures on the same plate?

Ans. It could be done.

Int. 41. In taking pictures in the manner described in answer to the said 14th interrogatory, after taking a picture and before taking the next, was the camera moved or tipped?

Ans. The camera was moved.

Int. 42. Please state whether the pictures referred to in your answer to said 14th interrogatory, taken in the manner therein described, were severally taken in the axial focus of the lens, or best part of the field of the lens, and were similar to each other.

232 Ans. They were not, and the pictures thus taken were all different.

Int. 43. Your attention is now called to Complainants' Exhibit No. 37, being four pictures of Mrs. Haas. Have you carefully examined this exhibit?

Ans. I have examined it.

Int. 44. Are you familiar with the Southworth patent, so called, and with the mode of taking pictures four on a plate, with his patented device?

Ans. I am.

Int. 45. When pictures are thus taken—I mean four on a plate—with Southworth's patented device, is each of the four taken through the same opening and in the same relative position as to the lens?

Ans. They are.

Int. 46. Now, referring to Complainants' Exhibit No. 37, please state whether the four pictures thereon, or any two of them, were, in your opinion, taken through the same opening and in the same relative position as to the lens, giving the reasons for your opinion.

Ans. Figures 1 and 3, in my opinion, were taken through the same opening, and 2 and 4 the same opening. They were not taken in the same relative position as to the lens. No. 1 was taken by a right quadrature of the angle of the lens or focus; No. 2, the left quadrature of the lens or focus. Both pictures were focused separately; the same with 3 and 4. The four pictures were taken by four separate exposures, each time "swinging the camera," that is in the parlance of photographers.

Int. 47. Will you now examine Complainants' "Exhibit No. 21," containing two sets of pictures of Mrs. Pratt, each containing four pictures, and state whether, in your opinion, the several pictures in each set could have been taken in the same opening and in the same relative position as to the lens? Give your reasons for your opinion.

Ans. In my opinion they were not. The reasons are, they are different views of the same person, and the apertures are different in size; and the focus of picture No. 1 is in the left lower corner; that of picture No. 2 in the right lower corner; and that of picture No. 4, the right upper corner; and that of picture No. 3, on the left upper corner.

233 Int. 48. I now hand you Complainants' Exhibits Nos. 18, 28, 35, 40, and 44, containing pictures of the Pratt boy, so called, four on a plate. Please state whether, in your opinion, the four pictures in one set were severally taken in the same field of the lens, and state also where, in your opinion, the centre of the field of the lens, or the axial focus, would strike the several pictures.

Ans. In my opinion they were not. Picture No. 1 in the lower left portion of the picture. Picture No. 2, in the lower right portion of the picture. Picture No. 4, in the lower right portion of the picture. Picture No. 3, in the lower left portion of the picture.

Cross-examination by counsel for defendants:

Cross-int. 49. Referring to your answer to the 46th question, please state fully what there is in Exhibit No. 37, which has enabled you to form the opinion expressed in that answer.

Ans. You will observe that the image through which the aperture is taken, or diaphragm, is entirely different in picture No. 1 from that of No. 2; and that portion of sharpness and definition is visible in each picture as I have described; that is, in picture No. 1, the left lower portion of the picture; picture No. 2, right lower portion; picture No. 4, right upper portion; picture No. 5, left upper portion; which accounts for the two lower pictures being more sharply defined, they being near the focus of the lens.

Cross-int. 50. Are these the only reasons you can give for the opinion you have expressed regarding the exhibit in question?

Ans. They are not. When very carefully measured they are found not to agree; whereas if they had been taken through the same aperture with a direct focus of the lens, as in the case of Southworth's patent, they would have been all alike, provided the sitter was arranged with a head-rest so as to be stationary and immovable; and the sharpness of the picture would have been on the face, as it is customary generally to focus on that part of the body.

Cross-int. 51. Please state fully what you mean by "when very carefully measured they are found not to agree;" and state particularly how they were "very carefully measured."

Ans. I measured the original pictures some ten years ago, and 234 I found a difference between the distance of the point of the hair on the left side of the forehead to the back of the ear in picture No. 1 from that of picture No. 3.

Cross-int. 52. Do you find that same difference in the picture now before you?

Ans. I do, and also in pictures Nos. 2 and 4. The difference is not so perceptible in the copies as in the original.

Cross-int. 53. Leaving out of your answer any reference to the "original," which is not in this case, please answer cross-int. 51.

Ans. The distance from the hair on the left side of the forehead to that of the rear of the head in picture No. 1 is different from that of picture No. 3. The same will apply to pictures 2 and 4.

Cross-int. 54. Please state whether the distance is greater or less in No. 1 than No. 3, and the same as to 2 and 4.

Ans. The distance is greater in No. 3 than in No. 1; and the distance in picture No. 4 is greater than in No. 2. This in my opinion is caused by the camera being raised and tipped in pictures 3 and 4.

Cross-int. 55. Please give your reasons for this opinion.

Ans. By raising and tipping the camera when pictures 3 and 4 were taken, it brought more of the top of the head into view than in 1 and 2; and therefore the difference which I have explained.

Cross-int. 56. Please explain the meaning of that part of your answer to the 46th int. which is in the following words: "No. 1 was taken by a right quadrature of the angle of the lens or focus; No. 2, the left quadrature of the lens or focus." Do you not mean to say that No. 1 was taken in the right quadrant of the field of the lens or focus, and No. 2 in the left quadrant of the field of the lens or focus?

Ans. I do.

Cross-int. 57. Now will you please give your reasons for the opinion you have expressed that No. 1 was taken in the right quadrant of the field of the lens, and No. 2 in the left quadrant of the field of the lens?

Ans. My opinion is, that from the peculiar structure of the shield used in making these pictures, it would not enable him to focus directly on the image, and thereby use the axis of the lens.

235 Cross-int. 58. What do you mean by the "peculiar structure of the shield used in making these pictures?"

Ans. From comparison of the pictures I am led to believe that an ordinary shield was used, and that a similar shield with one-quarter of the size cut out, the slot and grooves in the plate-holder being enlarged so as to admit an additional slide, and a spring was also introduced, and the extra slide inserted, covering three parts of the sensitized plate. On removing the outer slide, the upper right quarter of the plate was thereby exposed to the chemical rays of light; the outer slide was then introduced and removed from the camera; the inner slide was removed, and as in the case of these pictures, the slide was turned, and so on until the four pictures were exposed.

Cross-int. 59. What is there in Exhibit No. 37 that induces you to make the statement contained in your last answer?

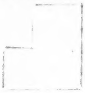
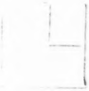
Ans. From what I have stated in answer to a previous question. On the edges of pictures Nos. 1 and 3 there are indentures on both edges that I find. In pictures 2 and 4 there are two very prominent projections which are not in 1 and 3. The same would apply to Nos. 2 and 4, and to the tops of 2 and 4, and 1 and 3.

Cross-int. 60. Would no other form of shield produce the same results?

Ans. Not unless it was made exactly the same as that shield; mathematically correct in every particular.

Adjourned.

BOSTON, *March* 13, 1876.

Cross-int. 61. You have stated, in answer to cross-int. 58, that the four pictures on Exhibit 37 could only have been produced by the use of an additional shield with one-quarter cut out; by this do you mean to say that they could not have been produced by the use of two such additional shields, one having one-quarter cut out thus:  and the other with a square notch corresponding to another quarter cut out thus:  the first being used for the right-hand upper and lower pictures, and the other for the left-hand ones?

236 Ans. Perhaps they might be produced in other ways.

Cross-int. 62. Suppose only one additional shield, with one corner or quarter only cut out as you at first stated to have been used; the two edges of the cut-out corner would have formed two sides of the aperture through which each picture was taken, would they not?

Ans. Yes.

Cross-int. 63. What would have formed the other two sides?

Ans. The side of the plate-holder.

Cross-int. 64. If there was any marked notch or other conspicuous conformation on the vertical side of the cut-out corner of the shield, ought it not to have been repeated on the inside edges of each of the four pictures; I mean on the vertical edges which are near each other?

Ans. No, it would not.

Cross-int. 65. Why not?

Ans. In my opinion, a great deal would depend on the position of the camera in taking the pictures.

Cross-int. 66. How would the position of the camera affect this?

Ans. If a shield was made like Exhibit Pike No. 1, with notches in the back of the opening, and four pictures be taken with it, two taken directly, and two taken in an oblique direction, No. 1 pictures would show nearly a straight line as in the exhibit; No. 2, taken in an oblique direction, would show the notches cut in the back of the slide, and therefore be impressed upon the picture.

Cross-int. 67. Of what were the shields, of which you have spoken in your answer to interrogatory 58, made?

Ans. Various materials.

Cross-int. 68. Were they generally of wood?

Ans. Generally; most always.

Cross-int. 69. Do you mean the slides, that you stated in that answer that were inserted in the slot, were generally of wood?

Ans. I do.

Cross-int. 70. Where, referring to your answer to cross-interrogatory 66, was the axis of the lens? At the centre between the four pictures, or elsewhere?

237 Ans. The centre between the four pictures.

Cross-int. 71. What lateral obliquity would the rays then have?

Ans. I am not prepared to answer that question.

Cross-int. 72. Do you mean to be understood as stating that you do not know whether the rays close to the axis of the lens are oblique or not?

Ans. The foci or focus of the lens are generally understood to be where the rays, I mean parallel rays, cross each other or meet; that is, I mean the visual focus.

Cross-int. 73. Do you mean to be understood as stating that the rays close to the axis of the lens are sensibly oblique, so as to produce the different effects on the edges of the slide or shield such as you have stated?

Ans. It might be so.

Cross-int. 74. Please examine Exhibit 37, and state if you consider that the four vertical edges of the four pictures could have been images of or produced by the same edge of the cut-out portion of the shield.

Ans. I should say not.

Cross-int. 75. If, however, a shield, with one quarter cut out as you have stated, had been used, must not all these four vertical edges have been made by the same edge of the cut-out quarter?

Ans. No, sir; it doesn't follow that it should be.

Cross-int. 76. Calling your attention to the pictures in said Exhibit 37 being longer than they are wide, do you make the same answer?

Ans. I do.

Cross-int. 77. Please look at Exhibit 37 again, and state whether the right-hand vertical edges of the pictures 2 and 4 are images of the same edge of the cut-out portion of the shield.

Ans. They are.

Cross-int. 78. If the shield had been used as you describe in your answer to cross-interrogatory 58, must it not have been turned over when used for the second picture?

Ans. Yes.

Cross-int. 79. Suppose a notch on side of the edge only, as you
238 describe in cross-interrogatory 66, would this produce an impression in both pictures?

Ans. It would depend entirely on the position of the camera when the pictures were taken.

Cross-int. 80. I call your attention to pictures 2 and 4 on said Exhibit 37 and ask if you now make the same answer?

Ans. I do.

Cross-int. 81. Suppose two dissimilar notches to have existed in the vertical edge of the shield, and they both produced images, would these images in the upper and lower pictures be in the same position in relation to each other?

Ans. It depends entirely on the position of the camera when the pictures were taken.

Cross-int. 82. Do you mean to be understood as saying that the position of the camera would affect the relative position of the two notches?

Ans. It would depend on the position and character of the notches on the shield.

Cross-int. 83. If one notch was near the top of the shield when figure 2 was exposed, and the shield was turned over as you have described for the exposure of No. 4, do you mean to state that this notch could still be near the top?

Ans. If pictures were made through an opening with notches similar to Exhibit Pike No. 1, the notches in one of the pictures would not be seen.

Cross-int. 84. (Question repeated.)

Ans. No, sir.

Cross-int. 85. Please answer the same question as to the images produced by such notch.

Ans. It would depend altogether on the position of the camera.

Cross-int. 86. Do you mean to state that the position of the camera can produce a change in the relative position of the image to the notch, so that while the notch is near the bottom its image would be near the top of the picture?

Ans. I mean to say that I can take four pictures through a notch diaphragm, and have the four notches photographed so that the 239 positions will be differently placed, by elevating or depressing the camera.

Cross-int. 87. (Question repeated.)

Ans. I think that would be an impossibility.

Cross-int. 88. Please examine Exhibit 37 and state whether you observe on the right vertical edge of 2 and 4 a conspicuous mark nearer the bottom than the top in each picture.

Ans. I observe them.

Cross-int. 89. Are these two marks the same or different?

Ans. That I couldn't tell without accurately measuring them.

Cross-int. 90. Do you believe them to have been produced by the same feature on the shield or slide?

Ans. They might have been.

Cross-int. 91. Do you not know them to have been produced by the same feature?

Ans. I do not know that they were.

Cross-int. 92. You have stated your belief that these pictures were taken through the same aperture; what are your reasons for that statement?

Ans. I believe, but I do not know, that they were made that way.

Cross-int. 93. Using that same belief, do you not believe these two marks to have been produced by the same feature on the slide?

Ans. They might have been.

Cross-int. 94. (Question repeated.)

Ans. They might have been.

Cross-int. 95. On what is your belief founded that these two pictures were taken through the same aperture?

Ans. To the eye they look alike.

Cross-int. 96. Is that all?

Ans. That is all.

Cross-int. 97. You do not, then, found this belief on the presence of any special mark on the edge of these pictures, do you?

Ans. Those marks induced me, with other things, to come to the conclusion I have in relation to them.

Cross-int. 98. Which marks?

Ans. The marks on the vertical edges of the two pictures referred to.

240 Cross-int. 99. And yet you have been unwilling to state positively that you believe these marks to have been produced by the same feature; are you now willing to state your belief as to them?

(Question objected to because of the misstatement in the first part of it, alleging unwillingness on the part of the deponent.

Counsel for defendants refers to cross-interrogatories 90, 93, and 94, and answers, and reads the same to witness.)

Ans. I am unwilling to state anything positive in relation to them.

Cross-int. 100. Suppose that to the rear of a camera-box of the proper size in relation to the focal length of the lens employed there were attached a flat board or shield with a projecting rim or frame, as shown in the accompanying drawing A, B, C, D, having in its centre an aperture, I, F, K, H, and that there was a holder for a plate, as indicated by E, F, G, which could be moved into the successive corners of the frame A, B, C, D, and held in each during the time necessary for the exposure; would such an arrangement enable one skilled in photography to make four pictures on the same plate?

Ans. It would.

(The drawing referred to is marked Defendants' Exhibit Pike 2, "J. G. S., examiner.")

Cross-int. 101. Would this arrangement be practically equivalent in all respects to the Southworth device?

Ans. I think it would.

Cross-int. 102. Suppose that the frame E, F, G, carrying the plate, overlapped the aperture I, F, K, H a little, as shown in the drawing, and that the frame A, B, C, D was not quite regular, would the aperture through which the light fell upon the picture be the same for each of the four pictures, or would it be slightly different in size and in the outline of the edges in its various pictures taken in the four positions of the plate?

Ans. They would be slightly different.

Cross-int. 103. What would constitute the inner or left-hand vertical edges of the upper and lower right-hand pictures; would they not be produced by the left-hand edge of the opening I, F, K, H?

241 Ans. They would.

Cross-int. 104. Would not the right-hand edge of the same opening constitute the right-hand margin or edge of the upper and lower left-hand pictures?

Ans. It would.

Cross-int. 105. Suppose a characteristic notch or other form to exist on the left-hand edge of the aperture I, F, K, H, on how many of the pictures would this be repeated, which would they be, and on which edge would this mark show?

Ans. On two; they would be on the two right upper and lower, on the left edge.

Cross-int. 106. If this mark were near the top in one of these pictures, would it be near the top in the other?

Ans. It would, in a relative position, provided the camera was not moved.

Cross-int. 107. Could it be near the bottom in one picture and near the top in the other?

Ans. It could not.

Cross-int. 108. Do you find on Exhibit 37 a small but well-defined notch or angular mark towards the top on the right-hand edge of the upper and lower left-hand pictures?

Ans. I do.

Cross-int. 109. Does it not appear from this that, as far as these marks are concerned, the pictures 2 and 4 might have been taken in such a slide as is described in question 100?

Ans. As there are various modes of producing the same results, I would not like to express my opinion positively in regard to those pictures Exhibit 37.

Cross-int. 110. Still, are you willing to say that such marks could not have been produced by the use of such a slide as is described?

Ans. I would not say that they could not be.

Cross-int. 111. Referring to cross-int. 105, suppose the characteristic notch to exist on the right-hand edge of the aperture; please answer that question.

Ans. On two they would be on the two left upper and lower on the right edge.

242 Cross-int. 111. What is meant by depth of focus, in lenses?

Ans. Depth of focus is a property in lenses of giving a clear image in planes of which the distance is unequal; or of giving on the same plane sharp images of objects at different distances.

Cross-int. 112. Have quadrate lenses any considerable depth of focus?

Ans. They have.

Cross-int. 113. Is this your own individual opinion or the accepted opinion of writers on the subject?

Ans. The accepted opinion of writers.

Cross-int. 114. Do not writers generally state that depth of focus in a lens is produced by a stop or diaphragm?

(Objected to as incompetent and inadmissible in cross-examination.)

Ans. They do.

Cross-int. 115. Do they not say, also, that to produce considerable depth of focus a small stop or diaphragm must be used?

(Objected to, as to the 114th cross-int.)

Ans. They do.

Cross-int. 116. Are lenses with small stops or diaphragms used in taking portraits in a gallery?

Ans. Not very often portraiture.

Cross-int. 117. If a portrait lens is focused on a certain part of the face, say on the forehead, would the parts in advance of or behind the plane of this be equally sharp?

Ans. They would not.

Cross-int. 118. Would this difference in sharpness, in the case of a lens such as you say was used in 1845 for portraiture be noticeable in the case of a picture of a face and bust?

Ans. It would be.

Cross-int. 119. How would it compare with the difference in sharpness in the image of objects in the same plane, but at and away from the axis in the same lens?

Ans. I should think about the same.

Cross-int. 120. On what part of a face and bust is a lens focused in taking a portrait?

243 Ans. A good artist will focus on the eye.

Cross-int. 121. Would not, then, the eye in any other part of a figure in the same plane make the sharpest image?

Ans. It would.

Cross-int. 122. Is the head-rest always used in portraiture?

Ans. Yes.

Cross-int. 123. When a head-rest is used is it not customary to change the position of the sitter, more or less, between exposures when several are made on the same plate?

Ans. Very frequently done.

Cross-int. 124. Would not a slight movement of the head produce the differences in the measurements mentioned by you in your answer to cross-int. 53?

Ans. I think not, as the head-rest that was in general use at the time this picture was taken was very heavy, and secured the head in position very firmly; but if such a movement were made it might produce such an effect.

Cross-int. 125. What is your present occupation?

Ans. The last four or five years I have been employed by the U. S. Government as consel, and at present I am writing a work on natural history.

Cross-int 126. And what was your employment or occupation between 1845 and 1850?

Ans. Part of the time employed in the importing house of Levi Cook & Co., importers of English, French, and German fancy goods. During that time I was experimenting in daguerreotype pictures, and making callotypes, as an amateur.

Cross-int. 127. Were you ever in the employ of Meade Bro's, in Albany?

Ans. Never.

Cross-int. 128. Did you ever use any of the apparatus in their gallery at Albany for the purpose of taking pictures?

Ans. Assisted in taking pictures a number of times.

Cross-int. 129. You have stated, have you not, that you were frequently in their gallery from 1845 to 1850; you were not there continuously, were you?

244 Ans. No, sir; occasionally; once or twice a month.

Cross-int. 130. Do you mean to be understood as stating that Meade Bro's while in Albany did not, or could not, have practised any process different from those seen by or shown to you?

Ans. I do not mean to state that they did not or could not.

Cross-int. 131. Do you mean to be understood as stating positively that there could not have been in Meade's gallery, in Albany, a box like Exhibit Irving 3, with a slit cut in the bottom?

Ans. I do not mean to say there was not a box of that kind there.

Cross-int. 132. Please take Exhibit Irving No. 3, and with the ground glass placed in the position described by Irving for focusing pictures with that exhibit, and looking through it at a human face in focus, distant about five feet from the lens, state what the size of that face is upon the ground glass.

Ans. About an inch.

Cross-int. 133. Would it not be practicable with that exhibit used in the manner described by Irving to make more than one picture of a human face of available size on the same plate?

Ans. It would.

NICHOLAS PIKE.

Attest:
JOHN G. STETSON, *Examiner*.

Deposition of William H. Rablen (recalled).

NEW YORK, *March*, 27, 1876—11 a. m.

Direct examination by J. S. ABBOTT, Esq., of counsel for complainants.

Int. 1. Referring to your former testimony in this case, as to the mode of taking more pictures than one on the same plate, "during the time you were with Meade," please state the kind and size of camera used in taking pictures in that way at that place, and how the box compared in size and form with Exhibit Irving No. 3.

Ans. It compares with this box, although I can't swear it was a copying-box. It might have been shorter.

245 Int. 2. Was it like "Exhibit Irving No. 3" in size and form when the part or slide which draws out of "Irving No. 3" is shoved in?

Ans. It is the same shape and form, but I can't swear but what it was shorter.

Int. 3. How many sizes of cameras were used at Meade Brothers at the time you were there, and how were they designated or named?

Ans. Three, I recollect of; one was a $\frac{1}{4}$ (quarter) size, $\frac{1}{2}$ (half) size, and 4-4 (four-four) size.

Int. 4. What size do you call "Exhibit Irving No. 3"?

Ans. Quarter size.

Int. 5. What size was used for taking two pictures on the same plate, referred to in your former examination?

Ans. Quarter size.

Int. 6. And were not the quarter-size boxes which were used in that gallery all alike as to form and size?

Ans. I think not.

Int. 7. In what respect did they differ?

Ans. Some had slides to draw out from the back and some had not; that was all.

Int. 8. How was the back end of the quarter-size boxes there used which had no slide finished? Was it not finished like the front end—that is, bevelled?

Ans. Yes, sir.

Int. 9. Please now refer to the latter part of your second answer above, wherein you say, "but I can't swear but what it was shorter," and state whether or not the reason of your so stating is because you can't state whether the box so used had a slide, and if it had no slide that you can't state whether the bevelled finish on the back end would leave the whole box of exactly the same length as if it had the slide.

Ans. That box could be made so much shorter and produce the same effect; that is, make pictures the same; but I can't state that it was.

(First part of the answer, down to the word "but," objected to by complainants' counsel as irresponsive.)

246 Int. 10. (Question repeated.)

Ans. Well, I have just stated.

Int. 11. How did the quarter-size boxes which were used in Meade's gallery when you were there which had no slide compare in length with the quarter-size boxes which had a slide when such slide was shoved closely into the box?

Ans. Well, they may have been the same size or they may have been shorter; I can't say.

Int. 12. Have you any recollection that they were shorter?

Ans. No, sir.

Int. 13. What size lens was used in said Meade's gallery when taking two pictures on a plate as described in your former testimony?

Ans. Quarter size.

Int. 14. While you were at said Meade's were or not quarter-size boxes without slides used for taking pictures by inserting the plate-holder in the top of the box substantially in the manner of inserting such plate-holder in "Exhibit Irving No. 3"?

(Objected to, as the testimony with regard to "Exhibit Irving No. 3" is that it has a slit in the bottom of said exhibit opposite to the two doors, and as used by Irving the plate-holder was passed through said door and slit in taking pictures.)

Ans. He had in those without slides two doors on the top of the box, two grooves to insert the slide; one groove was about one-third from the front of the box, and the other about an inch or an inch and a quarter from the back.

Int. 15. And in this "Exhibit Irving No. 3" are there not two such doors and two such grooves, excepting that the grooves in "Exhibit Irving No. 3" are on the inside of the slide or inner box, instead of being on the camera itself or the outer box?

Ans. The front door was here and opened towards the back, so that when we exposed the subject close we inserted the plate in the front groove, then when we exposed for a longer distance we inserted the plate in the back groove. There was a small bar between the doors to hang the front door to.

247 Int. 16. The doors then in the non-sliding cameras were a little narrower than in this Exhibit No. 3—enough narrower to admit the bar you have referred to, were they not?

Ans. Yes, sir.

Int. 17. And the grooves in the said non-sliding cameras were like the grooves—as to form and position in the camera—like the grooves in this "Exhibit Irving No. 3," excepting that they were on the inside of the camera-box instead of on the inside of the slide?

Ans. Yes, sir.

Int. 18. In taking pictures at Meade's gallery more than one on the same plate, as stated in your former examination, did you use the quarter lenses as they were bought—I mean with their full combination of parts?

Ans. Well, I never examined the two; Mr. Irving rigged it up.

Int. 19. Was there any change or alteration made in the lens, so far as you had any knowledge?

Ans. No, sir.

Int. 20. Was there any change or alteration made in the lens used, so far as you had any information, while you were at said Meade's gallery?

Ans. Not that I remember.

Int. 21. I now refer to 24th answer in your former examination, and after examining that answer please state what kind of description of camera you used for taking two pictures on a plate in Brooklyn and New York there referred to.

Ans. Bellows box with a sliding holder.

Cross-examination by counsel for defendant:

Cross-int. 22. Were or were not the pictures, more than one on a plate, taken while you were at Meade Brothers with a box and lens used in the manner described, perfect and satisfactory pictures of the objects or persons taken, and having sharp defined lines?

(Objected to as incompetent and inadmissible in this stage of the case and in cross-examination.)

Ans. They were, sir.

248 Cross-int. 23. Referring to the 15th interrogatory and answer in this present deposition, and which I now read to you—in taking pictures do you not, when you approach the camera to the subject to be taken, place the plate in the rear part of the box, and when you withdraw the camera from the object place the plate nearer the front of the box?

(Objected to for the same reasons.)

Ans. Yes, sir; I made a mistake in my answer to the 15th question.

W. H. RABLEN.

Sworn and subscribed to before me this 29th March, 1876.

E. G. THOMPSON, *Examiner.*

249 Proofs for final hearing on the part of the complainant in surrebuttal, taken before B. T. Vetterlein, as special examiner, by consent, under and pursuant to the sixty-seventh rule in equity, as amended.

NEW YORK, *Feb.* 8, 1877—1 p. m.

Met pursuant to notice, and by consent.

Present, A. A. Abbott, esq., of counsel with complainant; C. F. Blake, esq., of counsel with defendants.

Deposition of Richard S. Sauxay.

NEW YORK, *Feb.* 8, 1877.

Direct examination by J. S. ABBOTT, Esq., of counsel for complainants.

Int. 1. What is your name, age, residence, and occupation?

Ans. Richard S. Sauxay; I am forty-seven years of age; I reside at Hempstead, Long Island; I am an express messenger for Westcott's express.

Int. 2. Were you ever employed at the daguerreotype gallery of William A. Pratt, in Richmond, Virginia?

Ans. Yes, sir.

Int. 3. When were you first so employed?

Ans. Sometime about the middle of 1855, I think; it was during the warm season.

Int. 4. And how long did you remain in his employ there?

Ans. About twelve to fourteen months before I bought out his establishment.

250 Int. 5. And what season of the year was it when you bought out the establishment of said William A. Pratt?

Ans. It was the early fall—August or September.

Int. 6. Did you, during the time that you were so employed by Pratt, see there a device for taking more than one picture on the same plate by means of a sliding plate-holder, and without moving the camera-box?

Ans. I did.

Int. 7. During the time that you were employed by Pratt, was that device or apparatus openly or publicly used by him?

Ans. The answer I can give to that is, that he used it in his business, but it was not exposed to public view. It was used as all other materials were used at that time. He kept it from the view of outsiders as much as he could.

Int. 8. What, if you know, was the general reputation for truth and veracity of said William A. Pratt?

Ans. Mr. Pratt was generally looked upon as a sharp, shrewd, and tricky sort of a man.

Cross-examination waived.

R. S. SAUXAY.

Sworn and subscribed to before me this eighth day of February, 1877.

B. T. VETTERLEIN,
Special Examiner.

Adjourned to meet at Boston, No. 53 State street, on Monday, February 12, 1877, at 11 a. m.

SOUTHERN DISTRICT OF NEW YORK, *ss:*

I, B. T. Vetterlein, special examiner herein by consent, do hereby certify that the foregoing deposition was taken before me, on the part of the complainant, at the time therein stated; that the said deposition contains the complete record of the testimony of the witness therein named as taken in this cause, and that I am not of counsel or attorney herein.

B. T. VETTERLEIN,
Special Examiner.

NEW YORK, *February* 8, 1877.

251 *Deposition of Chandler Seaver.*

BOSTON, *Feb.* 12, 1877.

Direct examination by J. S. ABBOTT, Esq., of counsel for complainants.

Int. 1. Please state your name, age, residence, and occupation.

Ans. Chandler Seaver; fifty-two; Grantville, Mass.; photographer.

Int. 2. How long have you been engaged in that business and daguerreotyping?

Ans. Twenty-five years.

Int. 3. Are you acquainted with the multiplying plate-holder for cameras patented by the complainant Southworth, and a subject-matter of this suit?

Ans. Yes.

Int. 4. How long have you been acquainted with it? And state whether and how long you have used it.

Ans. I first became acquainted with it very soon after the patent was granted. I can't say exactly how long—a very few months after the patent was granted. I used it about as soon as I knew of its being patented. I have used it almost constantly since.

Int. 5. In taking four pictures on one plate with such plate-holder, how do the pictures compare with each other?

Ans. Exactly alike, unless the subject moves.

Int. 6. Have you been acquainted with any other mode of taking four pictures on the same plate without removing the plate-holder from the camera? If yea, please describe such mode briefly.

(Objected to on the grounds, first, that it is not within the limits of the order, giving the defendants time to take testimony of Mrs. Pratt and her son Julian, and the complainants to rebut such testimony as they might give; second, as reopening the case on expert testimony after the same had been already closed as to such testimony.

And defendant here gives notice that he shall move the court before the hearing of this cause to strike out from the record all such expert testimony and all other testimony hereafter taken which is not in rebuttal of the testimony given by Mrs. Pratt and her son Julian.

252 Complainants' counsel states that the proposed testimony he is about to take, though in the nature of expert testimony, is in rebuttal *for* the testimony of Mrs. Pratt; and that if her testimony had

been introduced previously to the taking of expert testimony he should not have rested that part of the case without additional expert testimony.

Defendants' counsel states that he has been unable to produce Mrs. Pratt or her son Julian at an earlier period in the examination of this case, as the motion papers granting the extension of time for the purpose of taking their testimony will show; and defendants' counsel understands that the order of the court on that motion to limit the defendant to the taking of their depositions, and to limit the complainants to a strict rebuttal thereto, and again renews his objection and notice of motion to strike out.)

Ans. I have. One mode would be with four lenses; another would be by tilting the camera so as to bring the subject in one-quarter of the field of the lens*e* at a time.

Int. 7. Suppose four pictures to be taken upon the same plate without removing the plate-holder from the camera, in the manner last above described by you, how would the pictures so taken compare with each other, and how would they compare with four pictures of the same subject taken with the use of said Southworth's multiplying camera?

Ans. The heads of the pictures in the upper half of the plate would be a little larger than those in the lower half, while the hands in the lower half would be a little larger than those in the upper half; and if the picture was taken with Mr. Southworth's sliding plate-holder there would not be that difference. In Southworth's patent they would be exactly alike. In tilting the camera, if a short focus lens was used, the light would not be the same on each picture, while in the other it would.

Int. 8. Suppose four pictures taken on the same plate by tilting the camera, as above stated, would any two of the four be exactly alike?

Ans. They would not.

Ans. Have you such knowledge as to the character and appearance
of pictures taken in the two modes referred to that if a copy
253 was shown you (four taken on a plate) you could tell whether the
originals were taken with the use of the said patented plate-holder?

(Objected to as before, and on the further ground that the witness has not been shown to be such an expert as to be capable of expertly answering the question.)

Ans. I think I have.

Int. 10. Please examine "Complainants' Exhibit No. 44," and state whether in your opinion the originals of the four pictures shown on this exhibit were taken with the use of any such plate-holder as the Southworth patented plate-holder, and give the reasons for your opinion.

Ans. I should say they were not. In the first place I see a stereoscopic effect in Nos. 1 and 2 which would not appear if taken with Southworth's plate-holder. That effect would appear if taken the other way—with the tilting camera. I see in looking on the heads more of the top of the head shows in Figures 1 and 2 than in Figure 3. The position seems to be in those all alike. Then I perceive a perceptible falling off in the light at the outer corner of the plate, which I should expect to find if made by tilting the camera. If taken with the Southworth patent the several pictures would present the same appearance in that respect. I find by measuring from the second button from the top on his coat the difference in the measurement which I previously spoke of, and the same amount of subject appears not to show in the different pictures that would otherwise, if taken by the Southworth patent.

Int. 11. Please examine these pictures again, and state whether you discover any differences in them which could not have been caused, in your opinion, by the movement or change of position of the subject when the pictures were being taken, and give the reasons for your opinion.

Ans. I do see a difference. The principal one is the illumination of the background, the outer corner on each picture being a good deal darker than the inner corners. The difference in the size of the head could hardly be caused by so slight a movement, if any, of the subject.

Int. 12. Please examine the lower parts of pictures numbered
254 3 and 4, as compared with the lower parts of pictures numnumbered 1 and 2, including such portions of the boy's pants as are visible, and state whether in your opinion these differences could exist or have been caused by movement of the subject if the originals had been taken with the said Southworth plate-holder.

Ans. I should say certainly not.

Int. 13. Could these apparent differences have resulted from any imperfection in the manipulations in making the originals, or by placing a mat or other thing upon the plate? What, in your opinion, must have been the cause, or principal cause, of the less development in the lower part of pictures 3 and 4, as compared with 1 and 2?

Ans. Yes, it might be to some extent. Where the mat touches the silver plate it is apt after some time to discolor it a little, and in copying would show a less development where the stain occurred.

Int. 14. I now call your attention to the lower pictures, Nos. 3 and 4, above what might be discolored a little from the cause named in your last answer, and will you please state whether in those parts there is or not a difference in the light or shade as compared with the corresponding parts of the upper pictures, Nos. 1 and 2?

Ans. I do see a decided difference. In 3 and 4 the light has not acted so strongly on the drapery or clothing as in the upper ones. That falling off, in my opinion, is in consequence of the lower figures being further away from the focal light, or being further from the centre than the upper ones. I see in the upper ones an opening under the arm showing the background very much larger than in the lower ones, which I think would be caused if the camera was tilted to produce them. In No. 4 I see the opening very slightly; in No. 3 not at all, the plate appearing to have been discolored or rubbed off at that point in No. 3.

Int. 15. Upon exposing a plate to the light for the purpose of taking a picture, and the proper time for taking a picture, if the centre of the picture is taken in the centre or focal axis of the lens, how will the light at the centre of such picture compare with the light as you recede from the centre to the outer portions of the same?

255 Ans. It is always much stronger in the centre.

(The objection and notice of defendants' counsel after the 6th of July is in due time renewed as to each all the testimony of this witness.)

Cross-examination by CHARLES F. BLAKE, Esq., of counsel for defendants:

Cross int. 16 (de bene esse). Has Mr. Southworth, one of the complainants, been present during the greater part of your examination-in-chief?

Ans. I can't say the greater part; he has been present a good part of it; I don't know when he came in.

Cross-int. 17 (de bene). During your examination has not Mr. Southworth had many consultations with Mr. Abbott, the complainants' solicitor, both during the pendency of interrogatories to you and between your answers and subsequent interrogatories?

Ans. He has had such consultations, but how many I can't say.

Cross-int. 18 (de bene). Were they not frequent, and of some considerable duration of time?

Ans. Yes.

Cross-int. 19 (de bene). Where are you engaged in business at present?

Ans. I am doing a little at my home in Grantville.

Cross-int. 20 (de bene). Of what nature is that business?

Ans. Making pictures of sitters and printing; also, copying.

Cross-int. 21 (de bene). Have you a shop?

Ans. Yes.

Cross-int. 22 (de bene). How large a one?

Ans. 15 by 24.

Cross-int. 23 (de bene). More than one room?

Ans. There is one room where I take the pictures, the skylight, the glass room. My customers, when they call, occupy my sitting room, my glass room being an L to the house.

Cross-int. 24 (de bene). You mean that this is a part of the house you occupy as a family residence?

Ans. Yes.

256 Cross-int. 25 (de bene). When did you first commence business as a photographer, and where?

Ans. I commenced learning the business in February, 1852, at Ives & Black's, 142 Washington street, Boston.

Cross-int. 26 (de bene). How long did you remain with them?

Ans. A year and a half, or about that, with Mr. Ives, I should say, as Mr. Black went out before I did.

Cross-int. 27 (de bene). Where did you go then?

Ans. I went into business with a Mr. Butler, at 140 Washington street.

Cross-int. 28 (de bene). How long did you continue with him?

Ans. Perhaps a year. I can't tell exactly. He sold out his interest to his brother and left, and I continued the business there until 1857?

Cross-int. 29 (de bene). Then it was during the time that you were with Mr. Butler's brother that you first used the Southworth device, was it?

Ans. Yes.

Cross-int. 30 (de bene). Had you previously to that time used any device for taking more than one picture on the same plate without removing the plate from the camera?

Ans. No.

Cross-int. 31 (de bene). Referring to question 11 and your answer, please explain "the difference in the size of the head." To which heads of that exhibit do you refer?

Ans. In Nos. 1 and 3 I find a difference in the length of the head; the height measuring from the second button from the top of the vest or coat to the top of the head. In No. 1 it is higher, but in measuring the width I find them alike or very nearly so.

Direct examination resumed:

Int. 32. At what time did your examination commence, and what time is it now?

Ans. It commenced at about 1.45 p. m. It is now 4 o'clock p. m.

257 Int. 33. Have you risen from your seat since this deposition was commenced?

Ans. I have not.

CHANDLER SEAVER.

Attest:

JOHN G. STETSON, *Examiner.*

Deposition of Edward Franklin Smith.

BOSTON, *February* 12, 1877.

Direct examination by J. S. ABBOTT, Esq., of counsel for complainants.

Int. 1. Please state your name, age, residence, and occupation.

Ans. Edward Franklin Smith; forty; Boston, Mass.; photographer.

Int. 2. How long have you been in that business and daguerreotyping?

Ans. Twenty-four years, more or less.

Int. 3. Are you acquainted with the multiplying plate-holder for cameras patented by the complainant Southworth?

Ans. I am.

Int. 4. How long have you been acquainted with it, and to what extent, if any, have you used it?

Ans. I can't recall the exact year when I first commenced to use it, but very soon after they were put upon the market. Have used one more or less ever since.

Int. 5. Have you been acquainted with any other mode of taking four pictures upon the same plate without removing the plate-holder from the camera? If yea, please describe such mode briefly.

Ans. I have. By using four lenses; by sliding one lens in four different positions on the front of the camera; third, by a tilting motion of the camera.

Int. 6. In taking pictures four on a plate in either of the modes mentioned in your last answer would the pictures so taken be alike?

258 Ans. They would not.

Int. 7. Have you been engaged in the business stated in your first and second answers since you commenced up to the present time?

Ans. I have.

Int. 8. Have you such knowledge as to the character and appearance of pictures taken in the modes named in your fifth answer, and also taken by the use of the Southworth multiplying plate-holder, that if a copy was shown you (four taken on a plate) you could tell whether the originals were taken with the use of such patented plate-holder?

Ans. In the case of the use of four lenses, and also in the case of moving the lens, I might not. In the case of the tilting camera I am quite sure I could.

Int. 9. Please examine Complainant's Exhibit No. 44, and state whether, in your opinion, the originals of the four pictures shown on this exhibit could have been taken with the use of any such plate-holder as the Southworth patented plate-holder, and give the reasons for your opinion.

Ans. No. The figures are not of the same size, to my eye. The corners are much darker than the centre. The point of sight of the camera is different in each, and that, consequently, shows the position different. It shows more of the top of the heads of the upper ones, 1 and 2, than the lower one, No. 3.

Int. 10. Could these differences, in your opinion, have been caused by the boys moving while the pictures were being taken if they had been taken with the patented plate-holder?

Ans. No, they could not.

Int. 11. Do you discover other differences in these pictures, as compared with each other, which would not exist if the originals had been taken with the patented plate-holder? If yea, please point them out.

Ans. There is a difference between the shade of Nos. 3 and 4 and 1 and 2, Nos. 3 and 4 being darker. That would not appear if made with Southworth's patent holder.

259 (Same objection, and notice taken by consent in due time to all the foregoing examination as appears after question 6 in the deposition of Mr. Seaver.)

Cross-examination by CHARLES F. BLAKE, Esq., of counsel for defendants:

Cross-int. 12 (de bene). For whose account are you at present engaged in business?

Ans. My own.

Cross-int. 13 (de bene). For how long have you been so engaged?

Ans. Eleven years last December. I have previously been in business on my own account.

Cross-int 14 (de bene). Were you previous to that time, namely, December, 1865, engaged in this business for your own account; and, if so, for how long a time?

Ans. I was. About five years, as near as I can recollect.

Cross-int. 15 (de bene). Previous to that how were you engaged?

Ans. I was at work for my father in the same business in Portland, Me.

Cross-int. 16 (de bene). For how long?

Ans. About four years.

Cross-int. 17 (de bene). Where first did you see or use the Southworth device for taking more than one picture on a plate without removing the plate from the camera-box?

Ans. I saw and used it first in Portland, Me., while I was with my father.

Cross-int. 18 (de bene). Had you ever seen or known of or used any device for taking more than one picture on a plate without removing the plate from the camera-box prior to that time?

Ans. I had not.

Cross-int. 19 (de bene). Have you continued to use the Southworth device since that time?

Ans. I have, with the exception of about three years while I was at work for J. W. Black and Black & Case.

Cross-int. 20 (de bene). When was this?

Ans. Immediately previous to my going into business at my present place, eleven years ago last December.

260 Cross-int. 21 (de bene). Please explain your answer to cross-question 14 in connection to your answer to the previous question.

Ans. The time in which I was engaged in business on my own account was just previous to my working for J. W. Black and Black & Case.

Cross-int. 22 (de bene). Then, from about the period from 1862 to 1865 you were engaged in work for J. W. Black and Black & Case?

Ans. As near as I can remember that was the time.

Cross-int. 23 (de bene). Describe the device used by you during that period, from 1862 to 1865, for taking more than one picture on a plate without removing the plate from the camera-box.

Ans. My work, while there, was copying pictures and making views, and I had no occasion to make more than one picture on a plate. That work was done in the room below me by Mr. Black and other operators.

Cross-int. 24 (de bene). What device, other than Southworth's, have you personally ever used for taking more pictures than one on the same plate without removing the plate from the camera-box?

Ans. I have used four, nine, and thirty-six lenses. I have also used a sliding tube. I have placed pictures to any number upon one sheet and copied them with a single lens. I have also used, but only on one or two occasions, a tilting camera, so called.

Cross-int. 25 (de bene). When first did you use a camera having either four, nine, or thirty-six lenses?

Ans. I first used a camera of four lenses while at work for my father in Portland. I don't recollect, but I think when I first went into business at my present place that I used the others, the nine and thirty-six.

Cross-int. 26 (de bene). How were the portions of the plate protected while using the camera with four lenses; I mean were the four lenses used at one and the same time, or were they used consecutively?

Ans. They were generally used all at the same time; not otherwise, except in some experiment.

Cross-int. 27 (de bene). What was the effect of light on pictures so taken?

261 Ans. The pictures were the same when using lenses of the same focal length, with the exception that they were not exactly the same view of the sitter, and, also, provided the plate used was evenly coated.

Cross-int. 28 (de bene). Then, if a plate was not evenly coated, it would make a difference in the light shown upon the picture, would it not?

Ans. It would make a difference in the shade of the picture.

Cross-int. 29 (de bene). It would be lighter in some parts and darker in others, would it not, if not evenly coated?

Ans. It would, other things being equal; I mean the focal length of the lenses.

Cross-int. 30 (de bene). I understand you to say, do I not, that with the exception of having used four, nine, and thirty-six lenses in a camera, and the use of the Southworth device, you have never used but "on one or two occasions" a camera having a single lens, in taking more than one picture on a plate without removing the plate from the camera-box?

Ans. I mentioned before that I had used a sliding lens, and also that I had copied any number of pictures with one lens. With those exceptions I have not.

Cross-int. 31 (de bene). By "copying any number of pictures," you mean, do you not, a simple reproduction of a group of pictures previously taken, massed together and taken at one exposure?

Ans. That is what I mean.

Direct examination resumed:

Int. 32. Suppose four pictures to have been taken on the same plate, without removing it from the camera, with a tilting camera, so called, would there be any difficulty in your determining substantially, by inspection, the point of view with which each was taken, whether the plate was evenly coated or not?

Ans. None whatever.

Cross-examination resumed:

262 Cross-int. 33 (de bene). Have you had any other experience in the use of a tilting camera than that which you have already given in your deposition?

Ans. I have.

Cross-int. 34 (de bene). State what it has been.

Ans. I have used almost constantly what I call a tilting camera, for the purpose of obviating crooked lines in making views and objects, such as furniture, stoves, piano-fortes, cabinet organs, and all other such objects as manufacturers wish photographs of for the purpose of making cuts or engravings.

Cross-int. 35 (de bene). Was or was not such use confined to the production of one picture on a plate?

Ans. It has been.

EDWARD F. SMITH.

Attest: JOHN G. STETSON, *Examiner*.

263 U. S. circuit court, southern district of New York.

SIMON WING ET AL.
vs.
EDWARD ANTHONY ET ALS. } In equity.

Proofs on the part of the defendants in the above-entitled cause, taken before Edward G. Thompson, one of the examiners of the court, under and pursuant to the 67th rule in equity as amended.

NEW YORK, *August 3d*, 1874—12 m.

Present, Mr. Blake, of counsel for defendants; Mr. Abbott, of counsel for complainant.

Counsel for defendants offers in evidence certified office copy of U. S. letters patent granted Albert S. Southworth, dated April 10, 1855, No. 12700, marked Def'ts' Exhibit No. 1, E. G. T., ex'r.

Also, certified office copy of U. S. letters patent, granted Issac Van Bunschoten, dated April 17, 1849, No 6357, marked Def'ts' Exhibit No. 2, E. G. T., ex'r.

Also, transcript of record from the Supreme Court of the United States, No. 259, of the case of Simon Wing, appellant, vs. Christopher C. Schoonmaker, and the proceedings on the remittitur therein in the court below, marked Def'ts' Ex. No. 3, E. G. T., ex'r.

264 It is consented by counsel that Def'ts' Ex. No. 3 may be read with the same effect and be subject to the same exceptions as though duly certified, but the testimony therein shall not be read as evidence in this cause.

Also, certified copy of the file-wrapper and contents of the application of Albert S. Southworth, marked Def'ts' Exhibit No. 4., E. G. T., ex'r.

ALEXANDER BECKERS, a witness produced on the part of the defendants, being first duly sworn, in answer to interrogatories propounded by Mr. BLAKE, says:

1. Q. What is your name, age, residence, and occupation?

A. Alexander Beckers; I am 59 years of age. I reside in New York. I am a manufacturer of revolving stereoscopes.

2. Q. How long and where have you carried on this business?

A. For fifteen years, about; my office was at first at 411 Broadway, and since then it is at 560 Broadway.

3. Q. Before commencing this business were you engaged in the business of taking daguerreotypes and photographs; and, if yea, when and where did you commence this business?

A. I was. I commenced in Philadelphia in 1843, and I brought to New York the first large daguerrotype apparatus. This was in 1844, I think.

4. Q. Did you ever make a plate-holder which enabled you to take a series of pictures without removing it from the box; and, if yea, when first did you make such plate-holder?

A. Yes, in 1852.

5. Q. Describe it.

A. There was a small plate-holder made of metal merely large enough to hold the plate in which the square opening was made, to expose as large a surface of the plate as possible; this plate-holder would move in a large square plate-holder in such a way that by moving it into the four different corners of the frame one-quarter of the plate would be exposed, as it then corresponded with the middle opening.

265 Complainants' Exhibit No. 15 only differs from the one I made in having a square hole instead of a round one, and the interior frame was made of metal and much smaller, as was also the outer frame, although it would hold the same size of plate as this exhibit.

6. Q. Did you use this plate-holder in your business; and, if so, how long?

A. I did. I used it about five years.

7. Q. What class of pictures did you take with it?

A. Small daguerreotypes, such as are used for miniatures and lockets specially.

8. Q. Before making this form of sliding plate-holder did you make any different plate-holder designed to bring different parts of the plate successively into the field of the lens?

A. Yes; I did.

9. Q. State when you made it, and describe it.

A. I made one in 1852, and it was constructed so that a revolving plate would expose one-quarter of the plate successively to the field of the lens.

10. Q. Did you use this in your business?

A. Yes, sir.

11. Q. What, if any, disadvantage did you find in this form of plate-holder?

A. The image it produced was not so sharp, not being in the best field of the lens or being away from the central part of the lens.

12. Q. Are you sure that it was in 1852 that you made the sliding plate you have first described; was it not in 1853?

A. The first one I described was made in 1853. The inferior one, the revolving one, was made in 1852.

13. Q. How do you fix 1853 as the time when you made your second sliding plate-holder?

A. I recollect that I was detained from executing this idea by moving from 201 Broadway to 264 Broadway.

14. Q. What have become of these plate-holders that you have described?

A. I do not know where they are at present, whether they exist or not.

266 15. Q. Did you ever part with them; and, if yea, when, and to whom?

A. I parted with them about 1858, I think, to Augustus Morand, together with the whole daguerreotype business.

16. Q. Where is Mr. Morand now, if you know?

A. I do not know; his brother told me he was living in England.

17. Q. Did the plate-holder which you made in 1853 have the hinged piece which is at the back of Complainants' Ex. No. 15?

A. No, sir.

18. Q. How many such plate-holders did you make before you gave up the daguerreotype business?

A. Three, I believe; they were for different sizes; one was for two impressions and two were for four impressions; there may have been more; I will not be positive about it.

19. Q. State whether or not all these were used by you in taking pictures for customers.

A. They were, by my partner and by another operator.

20. Q. Who was your partner?

A. Victor Piard.

And being cross-examined by Mr. ABBOTT, says:

21. X Q. Please state the year and month when you commenced business in New York, and the place where.

A. I commenced first as operator for Edward White in April or May (in the spring), 1843, and in 1844 I commenced on my own account on the corner of John and Nassau streets.

22. X Q. State what means you have of fixing the time when you made the first revolving plate-holder you have referred to.

A. I recollect that I found the image of this revolving plate-holder not quite satisfactory after having used it for some time, and studied how to make a better arrangement, and found one, but found no time to make it at once, because I had to move to another place; this was the 1st of May, 1853, that we moved from 201 Broadway to 264 Broadway, as shown by the rent-book.

267 23. X Q. Where is said rent-book, and when did you last see it?

A. I saw it a few months ago among some of my old papers stored away.

24. X Q. Can you produce it for inspection?

A. Yes, sir.

25. X Q. How many pictures, according to your best recollection, did you make with that first revolving plate-holder?

A. Not less than 50, and may be 500; I did not use it alone; my partner used it also.

26. X Q. How many pictures did you make with it on one and the same plate?

A. Four.

27. X Q. When and where did you last see that plate-holder?

A. I saw it last about 1854 or '5; it was lying among a lot of other things not used.

28. X Q. Can you find and produce it; and, if so, will you?

A. It was sold, with all the rest of the business, to Mr. Augustus Morand, as near as I can recollect.

29. X Q. When and where was it so sold, and where is said Morand?

A. It was sold with the business in 1858; the business was then at 411 Broadway. Mr. Morand is in England, so his brother told me.

30. X Q. Can you produce any plate with two or more pictures or negatives thereon which you made with that plate-holder?

A. No, sir. The circumstance itself explains that. Those plates were always cut apart to get the best picture or the two best pictures to sell to the customer, and the other part thrown into the scrap-box.

31. X Q. When did you make the second plate-holder you have described, and what means have you of fixing the time?

A. I made it in 1853, as soon as our new business at No. 264 Broadway was in order and I had time to make this new arrangement.

32. X Q. What time in 1853?

268 A. It was at the end of the summer or in the fall.

33. X Q. When did you make the next one?

A. During the winter, as much as I recollect.

34. X Q. How long did you use the second one?

A. Until I sold the business, about 1858.

35. X Q. Was the third made like the second?

A. Made in the same way, but for larger plates.

36. X Q. Please give the name of the operator referred to in your 19th answer, and state where he is.

A. John Bossardett. He is now in my employ.

37. X Q. At what time in 1853 did you move to 264 Broadway, and how soon after your removal did you make the plate-holder first described in this examination?

A. About the 1st of May we moved, and made the plate-holder referred to about four months afterwards.

38. X Q. Was not the frame in which the plate-holder slides in the instrument last above inquired about about twice as long as the width of the camera-box to which it was attached, and did not about one-half of the length of the frame project to one side of the camera-box?

A. No. That arrangement of having the frame in which the plate-holder slides larger than the camera-box was for the first or the revolving plate-holder.

39. X Q. After taking one picture with the plate-holder last above referred to, describe the operation or movement by which you took the next picture.

A. It requires but the sliding of the smaller square into the next corner of the larger one; it may be sidewise, or up, or down.

40. X Q. Were you a witness in the case of Wing against Schoonmaker?

A. Yes, sir.

41. X Q. Can you produce any pictures made by you in 1852, '3, '4, or '5 with any of the plate-holders you have referred to in your testimony?

A. I cannot tell without examining my stock of old pictures; there may be some lying about. I sold out my whole business, pictures, gallery, and all.

42. X Q. Can you produce any plate with two pictures or negatives thereon which you made by means of either of those plate-holders?

269 A. No.

43. X Q. Can you produce either of the plate-holders you have referred to in your testimony?

A. No, sir; but I can say that I identified them at the former trial of Wing against Schoonmaker.

44. X Q. What ones did you identify?

A. Two, I believe there were; one for making four pictures on a medium plate and one for making four pictures on a quarter plate, as near as I recollect.

The examination of this witness adjourned till August 4, 1874, at 10.30 a. m.

NEW YORK, *August* 4, 1874—10.30 a. m.

Present, counsel as before; and the witness, Alexander Beckers, being further examined on the part of the defendants, says:

45. Re-D. Q. Have you found your rent-book; and, if yea, does it contain anything which shows when you moved from 201 Broadway to 264 Broadway? If yea, please produce it, that the examiner may copy the same.

A. I have. The entry for the last payment of rent for 201 Broadway is as follows:

"NEW YORK, *July* 6, 1853.

"Received from Messrs. Beckers & Piard $58.33, in full for rent to May 1st.

"THOMAS EARLE."

My next entry for rent is as follows:

"NEW YORK, *August* 3, 1853.

"Received from Messrs. Beckers & Piard one hundred and seventy-three dollars and eighty-seven cents, in full for one quarter's rent for upper part of store No. 264 Broadway and bill of daguerreotypes.

"EDWARD B. HUMPHREY."

We moved into the building 264 Broadway about the 1st of June, 1853.

270 46. Re-D. Q. Look at the plate-holder I now hand you, and state if you know who made it and when it was made.

A. I made it myself in the winter of 1853–'4.

47. Re-D. Q. Was this the first one you made; and, if not, how did the first one differ from this?

A. It was not the first one; the first one differed but in being smaller.

48. Re-D. Q. Did you and your partner use the plate-holder just shown you in taking pictures for customers; and how long did you use it?

A. I used it in taking pictures for our customers for four years, and my partner used it for two years.

49. Re-D. Q. Is Defendants' Exhibit No. 6, E. G. T., ex'r, a correct copy of the plate-holder which has just been shown you, except that the hinges are on the opposite side?

A. Yes, sir.

And being further cross-examined by Mr. ABBOTT, says:

50. X X Q. Is the plate-holder referred to in the 46th Re-D. Q. the same plate-holder referred to in the 4th, 5th, and 12th questions and answers?

A. The revolving plate-holder was the first one I made; a small one, like this, was the second, and this was the third. The revolving one was made in 1852, and the second one in 1853, and the third (this) one between 1853 and 1854.

51. X X Q. Was this plate-holder an exhibit in the case of Simon Wing against Christopher C. Schoonmaker; and how was it marked in that case; and did you testify in that case relating to it?

A. This plate-holder was in that case, and I testified about it.

(Counsel admit that said plate-holder is marked "Exhibit X, Schoonmaker. Filed and marked April 3d, 1868. J. T. Lampert, U. S. examiner.")

ALEX. BECKERS.

Subscribed and sworn to the 4th day of August, 1874.

E. G. THOMPSON,
Examiner.

271 VICTOR PIARD being produced as a witness on the part of the defendants, being first duly sworn, in answer to interrogatories propounded by Mr. BLAKE, says:

1. Q. What is your name, age, residence, and occupation?

A. Victor Piard; I am 49 years of age; I reside at Oceanport, Monmonth Co., N. J.; I am at present engaged in farming.

2. Q. Were you ever engaged in the business of making daguerreotypes and photographs; and, if so, when first?

A. I was. I made daguerreotypes first in 1847.

3. Q. Were you ever in partnership with Alexander Beckers; and, if so, when did your partnership begin?

A. I was; it began on the 14th of November, 1849.

4. Q. When did it terminate?

A. March 10, 1856.

5. Q. Look at Complainants' Exhibit No. 15. Did you ever see a plate-holder constructed and arranged substantially like the one in Exhibit 15, and when and where first?

A. I did see such a plate-holder during the time I was in partnership with Mr. Beckers; I saw it first the first year of our partnership.

6. Q. Do you mean that you saw it in 1849?

A. I did.

7. Q. Do you know who made it?

A. My partner, Alexander Beckers.

8. Q. During your partnership with Mr. Beckers, did you ever use such a plate-holder in taking pictures for customers; and, if yea, how frequently?

A. It was a daily occurrence with us.

9. Q. Down to how late a time did you use such plate-holders?

A. Until I sold out my interest in the concern, March 10, 1856.

10. Q. How does the arrangement and construction of Complainants' Exhibit No. 15 differ from those used by you during your partnership with Mr. Beckers?

A. No difference, except having a knob, except this piece of block.

272 11. Q. Of what was the frame of the inner sliding piece made?

A. Made out of a piece of metal.

12. Q. Did it have the small hinged piece of Exhibit No. 15?

A. No, sir.

13. Q. What was the shape of the hole in the front of the plate in the one which you used?

A. Square.

And being cross-examined by Mr. ABBOTT, says:

14. X Q. Where did you and said Beckers commence business as partners?

A. At 201 Broadway.

15. X Q. How long did you continue at that place?

A. I could not say; but we went to 264 Broadway after we left there.

16. X Q. How long, according to your best recollection, did you do business at 201 Broadway?

A. It might have been between two and three years.

17. X Q. And how long at 264 Broadway?

A. The time is divided between 201 and 264 Broadway of the time of our copartnership.

18. X Q. Did your partner make more than one plate-holder?

A. Yes, sir; we had several for different size pictures.

19. X Q. Are you certain that the one you referred to in your direct examination was made in 1849?

A. I think it was; the first year of our partnership.

20. X Q. Can you safely swear that it was made before 1852?

A. I think I can.

21. X Q. Did you actually see him when he was making it?

A. Yes, sir.

22. X Q. Did you see him when making the first plate-holder made by him and used by your firm?

A. I did, for I was the instigation of him making it.

23. X Q. Is that plate-holder—I mean the one first made by your partner—the plate-holder which you refer to and describe in your direct examination?

273 A. Yes, sir.

24. X Q. To prevent any misunderstanding, please refer to direct interrogatories 5, 6, and 7, and your answers thereto, and state whether the plate-holder which you there refer to is the same plate-holder which, in your answer to the 22d X Q., you say was the first one that was made by your partner and used by your firm.

A. It was the first one we used practically.

25. X Q. Please explain the meaning of your last answer.

A. He had made several experiments previous to adopting this practically.

26. X Q. Is the plate-holder referred to in the answer to the 24th X Q. the first plate-holder with which you made any pictures for sale or for customers?

A. I cannot say for certain whether we had or not sold any of the products of the first holder we made, but after we had succeeded in making a holder like Complainants' Exhibit No. 15, we continued to make pictures by that means.

27. X Q. Were all of the plate-holders which were made by your partner and used by your firm "practically" similar, as to their construction, to the one you have described?

A. They were not.

28. X Q. Wherein were they dissimilar?

A. They differed by one being oval or round, and consequently did not slide as the one we used during our partnership.

29. X Q. When and where was the one you call oval or round made?

A. It was made in the year 1849, at 201 Broadway.

30. X Q. Before or after the making of the one which you say "we used during our partnership"?

A. It was before.

31. X Q. How long before, to your best recollection?

A. It was during that year we experimented in the process of making four impressions on a plate.

32. X Q. What year was that?

A. 1849.

274 33. X Q. Describe that plate-holder so made in 1849. I mean its construction and practical working, or manner in which you used it.

A. It was similar to Complainants' Exhibit No. 15, which would slide, and kept in its place by a spring.

34. X Q. Now please describe the one which you say, in your answer to the 28th X Q., you used during your partnership.

A. I have already described it.

35. X Q. Please describe again the one you say, in your answer to the 28th X Q., "we used during our partnership," giving as accurately and clearly as you can its construction and practical working, or the way in which you took pictures with it.

A. We used our ordinary holder, with a slide inside of it made of metal, and held the plate down in its place by a spring until it had performed its operation, introducing four pictures, which was all it was called upon to perform.

36. X Q. When and where did your partner make the first plate-holder you refer to in your last answer?

A. At 201 Broadway, in 1849, as near as I can recollect.

37. X Q. How long was it before you moved from that place?

A. I could not say, for I do not recollect. We were obliged to move by their tearing down the building.

38. X Q. Did he make any plate-holders while your partnership continued, after you moved to 264 Broadway?

A. I cannot recollect.

39. X Q. After you removed to 264 Broadway, did you or your firm use any plate-holder made by your partner that was not similar to the one made before your removal?

A. No, sir.

And being further examined by Mr. BLAKE, says:

40. Re-D. Q. By the original articles of your copartnership, when was it to expire?

A. May 1st, 1852.

41. Re-D. Q. Was this partnership afterwards renewed, and when, and for how long?

275 A. It was, May 1st, 1852, and was to run for five years.

42. Re-D. Q. Will you produce and annex a copy of the original articles of copartnership and their extension?

A. I will.

VICTOR PIARD.

Subscribed and sworn to the 3d day of August, 1874.

E. G. THOMPSON,
Examiner.

(Counsel for defendants offer in evidence photographic copies of pages 47 and 48, from Humphrey's Journal of the Daguerreotype and Photographic Arts, and the Sciences and Arts pretaining to Heliography, by S. D. Humphrey, editor. Volume 5. New York, office 546 Broadway. 1853-4. Marked Defendants' Exhibit No. 5, E. G. T., ex'r.)

Examination adjourned till August 4, 1874, at 10.30 a. m.

JOHN STOCK, being produced as a witness on the part of the defendants, being first duly sworn, says:

I am a manufacturer of photographic material; sometime in the year 1862 I purchased of Mr. Durand the plate-holder which has been this morning testified to by Mr. Beckers as being of his manufacture in 1853. I produce Exhibit No. 6, which I made as a true copy of such plate-holder. It is a true copy except that in mine the hinges are on the top near the projection of the slide, while Mr. Beckers' plate-holder has the hinges at the bottom. I am not willing to part with the original Beckers' plate-holder.

JOHN STOCK.

Subscribed and sworn to the 4th day of August, 1874.

E. G. THOMPSON,
Examiner.

276 (Copy Beckers' original plate-holder referred to and produced by John Stock offered in evidence and marked Defendants' Exhibit No. 6, E. G. T., ex'r.)

JOHN BOSSARDET, being produced as a witness on the part of the defendants, being first duly sworn, in answer to interrogatories propounded by Mr. BLAKE, says:

1. Q. What is your name, age, residence, and occupation?

A. John Bossardet; I am fifty-three years of age; I reside at No. 210 Thompson street, New York; I work on stereoscope instruments.

2. Q. Were you ever in the employ of Messrs. Beckers & Piard, and, if yea, when did you enter their employ?

A. I was; I went to work with Beckers & Piard about a month before they moved to 264 Broadway; that must have been in April, 1853, about a month before they moved to 264 Broadway.

3. Q. Will you look at the plate-holder like Defendants' Exhibit No. 6, and which was this morning shown to Mr. Beckers, and state when and where you first saw it, and who made it, if you know?

A. I first saw it at 264 Broadway, where Mr. Beckers made it.

4. Q. Was this the first one that he made operating as that does, and how did the first one differ from this, if there was a previous one?

A. This must have been the second. There was one used when I first went with them, but I don't know who made it. I know that he made this one; this must have been the third one.

5. Q. Was there one made prior to this, the plate-holder of which had four movements, as the plate-holder of this has?

A. Yes; the first one I saw him make was smaller; everything the same, only smaller.

6. Q. Did you see him make the two plate-holders which had the four movements which you have mentioned?

A. I did.

277 7. Q. Did you, while you were with Beckers & Piard, use these two plate-holders taking pictures for customers?

A. I did; I used them hundreds of times.

8. Q. While you were with Beckers & Piard did Mr. Beckers make other plate-holders having these four movements?

A. He made some with two motions, and some with four.

9. Q. And were these used in taking pictures for customers?

A. Yes, sir.

And being cross-examined by Mr. **Abbott**, says:

10. X Q. When and where did you see said Beckers make the plate-holder just shown to you, and referred to in the third question?

A. I saw him making it at 264 Broadway, about three or four months after he moved there.

11. X Q. How long did you continue in the employ of Beckers & Piard?

A. I continued in the employ of Beckers & Piard until Mr. Beckers bought Mr. Piard out, and then continued with Mr. Beckers until now.

And being further examined by Mr. **Blake**, says:

12. Re-D. Q. Can you produce one of the pictures made by the use of these plate-holders, having four movements, while you were in the employment of Beckers & Piard; and, if so, please do so?

A. I can, and do; the one now produced was made with the smallest plate-holder, by me.

(Picture offered in evidence, and marked Def'ts' Exhibit No. 7, E. G. T., ex'r.)

And being further cross-examined by Mr. **Abbott**, says:

13. X X Q. Whose picture is this?

A. I do not know; it was a person I never saw after I took it.

14. X X Q. When did you take it?

278 A. I could not say; it was made with that holder, and I made it some time after; I couldn't give no date.

15. X X Q. Where has that picture been since it was made?

A. When Mr. Beckers sold out I took it home and kept it just for the curiosity of the thing.

16. X X Q. Can you produce any plate having two or more pictures or two or more negatives on the same, made while you were in the employ of Beckers & Piard?

A. I don't think I could produce any with two or more on; I don't think I have any with two or more on.

And being further examined by Mr. **Blake**, says:

17. Re-Re-D. Q. Is there anything about the back of this picture, Defendants' Exhibit No. 7, which indicates that it was made in one of these sliding frames; and, if so, please point it out?

A. I think one of the corners shows a bend where the plate was bent down and held while being polished—the lower right-hand corner.

J. BOSSARDET.

Subscribed and sworn to this 4th day of August, 1874.

E. G. THOMPSON,
Examiner.

Augustus Semmendinger, a witness produced on the part of the defendants, being first duly sworn, in answer to interrogatories propounded by Mr. **Blake**, says:

1. Q. What is your name, age, residence, and occupation?

A. Augustus Semmendinger; I am 54 years of age; I reside at Fort Lee, New Jersey; I am a manufacturer of camera-boxes.

2. Q. You have been sued on this patent in New Jersey, have you not?

A. I have.

3. Q. Look at Defendants' Exhibit No. 6, and state if you ever

279 saw a sliding plate-holder substantially like it in mode of construction and operation; and, if yea, when first and where?

A. I have seen them in about the year 1853, in Alexander Beckers' place on Broadway, New York.

4. Q. How did the one you then and there saw differ from the model Defendants' Exhibit No. 6?

A. It was materially the same as that.

5. Q. Was it the same size, or larger or smaller?

A. It was not larger; it strikes me it was the same as this.

6. Q. Did you ever see it in use taking pictures?

A. I have seen it in use in Beckers' place, used by himself and by his assistant.

AUG. SEMMENDINGER.

Subscribed and sworn to the 4th day of August, 1874.

E. G. THOMPSON,
Examiner.

Enos B. Foster, being produced as a witness on the part of the defendants, and being first duly sworn, in answer to interrogatories proposed by Mr. **Blake**, says:

1. Q. What is your name, age, residence, and occupation?

A. Enos B. Foster; I am 42 years of age; I reside in Brooklyn; I am a photographer.

2. Q. Have you ever been engaged in the business of taking daguerreotypes and photographs; and, if yea, when first, and what experience have you had in that business?

A. I have, since March, 1847. I have been engaged at the business nearly all the time since then.

3. Q. In whose employ were you first in this business?

A. Philip Haas, in New York.

4. Q. Have you ever seen an apparatus having a sliding plate-holder so arranged that a number of pictures can be taken by moving different parts of the plate successively before the lens without drawing the plate-holder from the box?

280 A. Yes, sir.

5. Q. When did you first see such an apparatus, and where?

A. At Philip Haas', in 1847.

6. Q. Can you produce a model of that apparatus; and, if you can, please do so?

A. I can. I produce a model.

(Model offered in evidence and marked Def'ts' Exhibit No. 8, E. G. T., ex'r.)

7. Q. Was an apparatus like Def'ts' Exhibit No. 8 at Philip Haas' when you first went there?

A. Yes, sir.

8. Q. Was it then new, or did it bear marks of having been used?

A. It was not new. It had been used.

9. Q. Did you see such apparatus used while you were with Philip Haas; and, if yea, how frequently?

A. I did. It was used whenever required; it was only used for making locket pictures for customers.

10. Q. While you were with Philip Haas did you ever use it yourself?

A. I did, but not for customers; only in practice in learning the trade; Haas made all his pictures himself.

11. Q. How long did you remain with Haas?

A. Between five and six years.

12. Q. Where is Haas now?

A. I do not know; I have heard that he was dead.

13. Q. Does the model you have produced differ, in any of its details, from the apparatus you saw at Haas' in 1847; if yea, point out in what respects?

A. The principle is the same; the only difference is that the shoulder on the back of the box was a little higher, and the plate-frame thicker, and the springs were fastened on the face of the shoulder on the back, instead of being mounted on a bracket, as in the Exhibit No. 8.

14. Q. Who else was in Haas' employ while you were there?

A. When I went there Silas Silleck was there.

281 The cross-examination of this witness is reserved to counsel for complainants.

E. B. FOSTER.

Subscribed and sworn to the 4th day of August, 1854.

E. G. THOMPSON,
Examiner.

The examination of witnesses on the part of the defendants is adjourned, by consent of counsel, till September 1, 1874, at 12 m.

NEW YORK, *September* 1, 1874—12 a. m.

Met pursuant to adjournment.

Present, counsel as before.

It is hereby stipulated by the counsel for the respective parties that the further proofs herein on the part of the defendants be taken before B. T. Vetterlein, as special examiner, during the absence of E. G. Thompson, esq., and in the place and stead of the said E. G. Thompson, with like force and effect as if taken before one of the examiners of the court.

JAMES B. SINSABAUGH, a witness produced on the part of the defendants, being first duly sworn, in answer to interrogatories propounded by Mr. BLAKE, says:

1. Q. What is your name, age, residence, and occupation?

A. James B. Sinsabaugh. I am 64 years of age. I reside in Troy, New York. I am a dealer in house-furnishing goods.

2. Q. Did you ever practice the taking of daguerreotypes and photographs; and, if yea, when first?

A. Yes, sir; as near as I can recollect it was in 1842 or 1843; somewhere along there.

3. Q. Where did you first carry on this business?

A. Syracuse.

282 4. Q. How long did you carry it on there—up to what year?

A. I must have carried it on there to 1847, which is the year I think I left there.

5. Q. Where did you go then?

A. To Geneva, New York State.

6. Q. When did you cease to carry on the photographing business?

A. Next February it will be six years.

7. Q. Did you ever use for making daguerreotypes a camera-box or apparatus so arranged that you could take two or more impressions on the same plate without removing the plate-holder from the box?

A. I did; daguerreotypes, at the time I was in Syracuse.

8. Q. When did you first use such an apparatus?

A. It was in the fall of 1846.

9. Q. Please describe how you used this plate-holder to take two or more impressions.

A. We were using a small camera then, which we called "quarter size." The way that I got the idea was this: Sitting a person for a picture, there was another lady ran past the camera and hit the leg of the box a little, and moved it a little. After the lady had sat sufficiently I took the plate out and applied it to the mercury bath. When I came to look at it, after having had it in the bath sufficiently, I found I had two good impressions; this gave me the idea. It was in the fall of 1846. Next I prepared a plate; but previous to this I put a slot in the camera-box in front of the plate, where the plate would have to pass. I marked the plate-holder, so that I pushed it in only a part of the way, and got one impression, and I then pushed it in further, and got another impression on the other part of the plate.

10. Q. When you had done this, how frequently did you afterwards repeat it in your business?

A. I did it frequently, and afterwards cut a hole in the side of the camera and slid the plate through that.

11. Q. State whether or not you afterwards used this camera with the hole in its side in taking pictures for your customers; and, if yea, how often?

283 A. I could not say exactly how often. I took a number of them.

12. Q. When did you first use the plate-holder with a hole in the side?

A. It did not work satisfactory from the top, and after that I cut in from the side. It was not long afterwards. It may have been two or three months—I could not say.

13. Q. In using this apparatus, was there anything on the plate-holder to show you how far to slide the plate?

A. I cut a little notch in it with my knife, so as to know how far to slide it in.

14. Q. Were you examined as a witness in the case of Wing vs. Schoonmaker?

A. I was.

15. Q. Did you on that occasion produce pictures taken on an apparatus such as you have described; and whose pictures were they?

A. Yes, sir; some of my wife, of a niece of hers, and some of outsiders.

(Two of these pictures were marked Exhibit 3, Schoonmaker, by the examiner, in the suit of Wing vs. Schoonmaker, in the northern district of N. Y., U. S. C. C. To which I certify by consent, B. T. Vetterlein, S. E.)

16. Q. What became of the apparatus having the hole in the side of the camera-box and a sliding-plate for taking two impressions, which you have described?

A. It was destroyed by fire.

17. Q. When and where?

A. I could not say exactly the time. It was in Geneva.

And being cross-examined by Mr. ABBOTT, says:

18. X Q. Have you any means of determining with certainty when you moved to Geneva?

A. No, sir.

19. X Q. State at what time you moved, according to your best recollection?

A. I think it was in 1848. I won't be positive.

20. X Q. In what part of 1848?

284 A. It must have been in the summer, because we moved by canal.

21. X Q. What were the two pictures marked Exhibit No. 3, Schoonmaker, referred to in your answer to the 15th question?

A. Of my daughter.

22. X Q. How happened it that the box referred to in your answer to the 16th question was destroyed by fire?

A. It got so old that we had to get a new one of a larger size. The milinery shop got on fire and burnt up the building.

23. X Q. What shop, and where situated?

A. In Geneva. It was on the south side of Seneca street; the entrance was number 18.

24. X Q. Did you occupy the shop at the time of the fire?

A. Yes, sir.

25. X Q. When was that fire?

A. I could not say positively what year the fire was in.

26. X Q. When, according to your best recollection?

A. It must have been between 1860 and 1865. I could not say positively.

27. X Q. Who made that camera-box?

A. I could not say.

28. X Q. You were fully examined as a witness in the Schoonmaker case, were you not?

A. I believe I was.

29. X Q. Have you carefully read your cross-examination in the Schoonmaker case, and the redirect shown to you by consent of defendants' counsel; and do you find your answers to be correct, and adopt the same instead of having the questions repeated?

A. Yes, sir.

30. X Q. Is the following a true copy of the questions and answers referred to in your last answer?

1. Q. How long did you continue manufacturing pictures in the manner you have described?

A. I cannot say positively. I should say it was less than a year

285 2. Q. About how many sets of pictures of that description did you make and sell?

A. I cannot state the number, but I made and sold but very few.

3. Q. Why did you not make them more extensively?

A. Because it was so much trouble to make them, and the pictures were so uncertain.

4. Q. Why were the pictures made by this process so uncertain?

A. Because in sliding the plate-holder we would sometimes slide or move the box, and sometimes we would push the plate-holder so that the light would strike over on to the picture already made.

5. Q. Then the pictures made by that process you have already described were frequently imperfect, were they?

A. They were.

6. Q. You used a common box and a common plate-holder, did you not?

A. I did.

7. Q. The sole alteration in the box was this half partition shown in Exhibit D, Schoonmaker, was it not?

A. It was.

8. Q. What became of the camera-box that you used at Syracuse in the manner you have described?

A. It was destroyed by fire at Geneva about three years ago.

9. Q. Did it contain half partitions at the time it was destroyed?

A. I think it did; a new style of boxes had been got up, and I had thrown this one aside a number of years ago.

10. Q. In centering the image before taking the picture, on what part of the ground glass was the image thrown, on the middle or on one side?

A. On one side.

11. Q. Then, in taking the picture, the sitter was not placed directly in front of the lens, was he?

286 A. He was not; he was placed a little one side, so as to throw the image on that part of the ground glass not covered by the partition.

12. Q. When taking the first picture, how was that portion of the plate not exposed to the action of the lens protected from the light?

A. By the slide of the plate-holder, which, when taking the first picture, was drawn half way out.

The witness being re-examined by the defendants' counsel, further testified as follows:

1. Q. In making pictures by the instrument that you used in 1846, which you have described, if said instrument had been fastened firmly to a camera-stand, would the difficulty that you have described in your cross-examination in taking pictures have been obviated or not?

A. It would be so in a measure, but not wholly, because in sliding the plate-holder, sometimes not far enough and sometimes too far, the light would not strike the plate so as to make a perfect picture.

2. Q. State whether you had a mark on the slide or plate-holder to show how far, in making a picture, to shove it in or draw it out.

A. I did have such mark.

3. Q. State how the having the camera-box of 1846, that you have referred to, fixed firmly on a camera-stand, would have affected the operation in making pictures in reference to the difficulty you have described on your cross-examination.

A. In part it would remedy the difficulties I have described, but I did not get perfect pictures every time, and could not do so. If they could do it they were more successful than I was.

4. Q. In taking three pictures upon a plate, how do the two outside pictures compare as to perfection with the middle one?

A. They compare well by being seated in a semi-circle.

5. Q. In making three pictures on a plate, are the two outside pictures on a line with the lens or not? State how they stand.

A. They do not stand on a straight line.

287 A. It is.

31. X Q. Can you produce any plate or card having two or more pictures on the same, made by the use of a box, such as before described?

A. I cannot; Mr. Schoonmaker took the pictures on to Washington and left them there, as he informs me.

And being further examined by Mr. BLAKE, says:

32. Re-D. Q. State whether or not the pictures taken by you with this camera having the sliding-plate were in the building destroyed by fire, so far as you had any then in your possession.

A. I don't recollect whether there were any in there or not.

J. B. SINSABAUGH.

Sworn and subscribed to the 1st day of September, 1871.

B. T. VETTERLEIN,
Special Examiner.

RODNEY H. DEWEY, a witness produced on the part of the defendants, being first duly sworn, in answer to interrogatories propounded by Mr. BLAKE, says:

1. Q. What is your name, age, residence, and occupation?

A. Rodney H. Dewey; I am 50 years of age; I reside in Pittsfield, Massachusetts; I am a photographer.

2. Q. How long have you been a photographer?

A. Since the spring of 1849.

3. Q. Have you ever used an apparatus so devised that two or more pictures could be taken on the same plate without removing the plate-holder from the box?

A. Yes.

4. Q. When did you first use such an apparatus, and where?

A. I would not swear when I first used such an apparatus, but I will swear when I did use it, which was in 1852; North Adams, Massachusetts, was the first place I ever used it in.

288 5. Q. Please describe how the box and plate-holder were arranged so that two or more pictures could be taken on the same plate without removing the plate-holder from the box.

A. In the boxes used in those days the plate-holder entered from the top, pushing down into the box, which produced more than one impression on the same plate. A metal diaphragm, with suitable-sized openings, was attached to the front of the shield or plate-holder. In order to produce duplicate pictures through these different openings in the diaphragm a slot was cut through the bottom of the camera-box and also through the stand, allowing the plate-holder to be moved through this slot into a dark chamber beneath the camera-stand. After an exposure of the plate it was then moved directly through the slot, bringing another portion of the plate in front of the lens, thus producing two pictures. I also produced five pictures by withdrawing the shield—upon which two pictures had been produced as described—from the camera-box, refocussing on the other side of the plate and producing two more thereon; the shield is then withdrawn and focussed directly in the centre to produce the fifth picture.

6. Q. Did you use such a plate-holder and box as you have described in taking pictures for customers; and, if so, can you tell us of any pictures so taken?

A. I did. I can mention one picture of four ladies in Williamstown, Massachusetts.

7. Q. Did you take any pictures with such an apparatus of any college classes; and, if so, what classes, of what colleges, and in what years?

(Objected to as leading.)

A. I did, in 1852, of Williams College.

8. Q. How frequently did you use this apparatus in taking pictures for customers?

A. Whenever parties wished more than one picture of the same size we used it. My brother was with me.

9. Q. What has become of that apparatus?

A. Mr. Schoonmaker, of the city of Troy, came to my place, and carried it to Troy with him, where Mr. Wing had a suit against him.

289 10. Q. How long did you use an apparatus of the character which you had in 1852?

A. I have no means of knowing. The daguerreotypes went out of use almost in 1852 or 1853, I think, the ambrotype taking its place. I don't remember how long I used it, it was so long ago.

And being cross-examined by Mr. Abbott, says:

11. X Q. Were you a witness in the case of Wing vs. Schoonmaker?

A. Yes, sir.

12. X Q. Does the following answer to the 12th X-question in your testimony in Wing vs. Schoonmaker, now shown to and examined by you, contain a correct description of the plate-holder and diaphragm you have referred to in this examination, and is that answer correct?

Q. 12. Please explain how that diaphragm was used?

A. We had several different diaphragms, with apertures corresponding with the number of pictures we designed to take; the diaphragm was made stationary, or was firmly attached to the front of the plate-holder when used; the object of the diaphragm was to cover a portion of the plate from the light while the impression was being taken on the exposed part, and we moved the diaphragm and plate-holder at the same time; the two on one side of the plate were made without removing the plate holder from the box; then remove the plate-holder and refocus the instrument upon the other side of the plate, and thus take two pictures more; then remove the plate-holder again, and refocus it again, and then take the centre picture; to make three or four pictures through the centre of the plate we did not remove the plate-holder from the box, but simply passed it down through the bottom of the box and then take the desired number of pictures; I mean that we could take any number of pictures, one over the other, according to the length of the plate, without taking it from the box; the plate did not move
290 over an aperture in the diaphragm, as in the Southworth patent; we moved the plate and aperture or apertures together.

A. I think it is.

13. X Q. Can and will you produce any picture made in the manner above described?

A. I do not know whether I can or not. I have not been in the town twenty years where I have made them.

14. X Q. Have you any plate or card containing two or more pictures produced in the manner you have described?

A. I think not.

15. X Q. Can you refer me to any person who probably has any such?

A. Mr. Solomon Buckley, of Williamstown, Massachusetts, had such a picture, and whether you can get it or not, or whether they are living, I don't know.

16. X Q. Can you give the name of any one else?

A. No, sir.

17. X Q. Can you give the names of the ladies referred to in your answer to the 6th question?

A. There were Misses Buckley among them; whether they were all Buckleys or not I can't tell you.

18. X Q. The daughters of Mr. Solomon Buckley, mentioned in answer to 15 X-question, and do you refer to their pictures in same answer?

A. Yes; I do.

19. X Q. Can you give the name of any person referred to in your answer to the 7th question?

A. They were students; I cannot give their names. Twenty-two years ago; I would not be likely to remember them.

20. X Q. Do you refer to the class that graduated in 1852?

A. I cannot tell. I went there for the purpose of taking the graduating class.

21. X Q. Where did you get the camera-box you have referred to, and which Mr. Schoonmaker took to Troy?

A. Of Sisson & Parsons, of Albany, New York.

291 And being further examined by Mr. BLAKE, says:

22. Re-D. Q. When you used this apparatus did you use it in secret, or did you use it in a room open to be entered by your customers and others?

(Objected to as leading.)

A. It was used in the ordinary operating-room; it could not be used anywhere else.

23. Re-D. Q. In taking pictures for lockets at this time what apparatus did you use?

A. I used this duplicating-box.

And being further cross-examined by Mr. ABBOTT, says:

24. X X Q. Did you make any locket pictures, and for whom?

A. Yes, sir; we made locket pictures; I don't remember for whom.

25. X X Q. Did you not, about the year 1861, go to Boston and attempt to purchase the exclusive right to use the Southworth patent, so called, being the patent involved in this case, or the exclusive right thereof for certain territory?

A. I have no knowledge of any such transaction.

26. X X Q. Did you not apply to Mr. Wing, and also to Mr. Ormsby, for such exclusive right?

A. I think I have answered that question; Mr. Ormsby came to Pittsfield to sell me the right, and sold it to Mr. Seaver, I think is his name.

27. X X Q. Did you not apply to Mr. Wing and Mr. Ormsby, when both were together in Boston, to purchase such exclusive right?

A. I have no recollection of such a transaction.

RODNEY H. DEWEY.

Sworn and subscribed to the 1st September, 1874.

B. T. VETTERLEIN,
Special Examiner.

292 WILLIAM A. PRATT, a witness produced on the part of the defendants, being first duly sworn, in answer to interrogatories propounded by Mr. BLAKE, says:

1. Q. What is your name, age, residence, and occupation?

A. William A. Pratt; I am 55 years of age; I reside in Staunton, Virginia; I am an architect and engineer.

2. Q. Did you ever practice the taking of photographs and daguerreotypes; and, if yea, when and where did you begin this occupation?

A. As near as I can remember, I began taking daguerreotypes in the town of Alexandria, Virginia, in 1844.

3. Q. Did you ever use a plate-holder adjustable in the camera, so that successive pictures could be taken on the same plate without removing the plate-holder therefrom, and without removing the lens?

A. I have.

4. Q. When did you first use such a plate-holder?

A. I think in 1845; I know in 1846.

5. Q. Where did you first use it?

A. I think in Alexandria.

6. Q. Was this plate-holder, thus adjustable, of your own invention, or did some one else teach you to make it and use it?

A. My own invention.

7. Q. Will you please describe it, using any model you may have to explain it and its mode of operation?

A. A piece of paper, marked "plate," represents one of the polished plates of that time. It was laid with its burnished face downwards upon a pasteboard frame, which, after being covered with a tin or sheet-iron sheath, was placed in the plate-holder so as to expose one-fourth to the light, when the outside slide was drawn. The plate was then moved down as far as it would go, and a second quarter exposed. It was then moved to the left as far as it would go, and a third quarter was exposed. It was then moved up as far as it would go, and the fourth quarter exposed. The outside plate-sheath was pressed down
so as to close the camera, and the whole was then removed from
293 the camera, and the plate was then exposed to vapor of mercury,
and all four pictures appeared.

8. Q. If you have here a model of the device you have just described, please produce it and put it in evidence.

A. I have, and I do so.

(Model offered in evidence, and marked Defendants' Exhibit No. 9, B. T. V., S. E.)

9. Q. For what purposes, and how frequently, did you use this plate-holder?

A. Before I went to Richmond, for taking small portraits, for lockets and such like, occasionally. After I located in Richmond I made a pictorial record of the legislature and conventions that sat there, and until after the fire a copy of this pictorial record ornamented that which had been my gallery. Another copy I had previously sold or done away with, and this last is probably now in existence.

10. Q. Please describe a little more minutely what those pictorial records of legislatures and conventions were.

A. I took four pictures, in the sheath previously described, of each gentleman composing the bodies alluded to. I pasted one of the four fast to a sheet of plate-glass, side by side, making fifty-two or more heads, as the case might be, in a regular frame. The other three copies I sold or made away with.

11. Q. How many conventions and legislatures did you so take?

A. I think three legislatures and one convention.

12. Q. Can you name any of the legislators or eminent men whose portraits you so took?

A. Judge John Y. Mason, president of the convention; Judges Fultz and Sheffey, members of said convention. I can't name any others at at present.

13. Q. Besides legislatures and conventions, what work did you do with this apparatus?

A. I presume some nearly one-third of the work of the gallery.

14. Q. How extensive was the work of the gallery?

294 A. I should suppose some three or four thousand pictures per annum.

15. Q. During the time you used this apparatus did you have students and assistants; and, if yea, how many?

A. Yes; from four to five in all; I do not mean at one time.

16. Q. State whether or not these students and assistants used this apparatus?

A. Yes, sir; one-third of the work of the gallery was done with it.

17. Q. How many cameras fitted with such sliding-plates have you used?

A. Three or four.

18. Q. During what period of time did you use such cameras provided with such plate-holders?

A. From 1846 to 1856, when I sold out and left the business.

19. Q. In the use of these plate-holders in taking pictures how was the axis of the lens situated with reference to the portion of the plate exposed?

A. Always on the dead center.

20. Q. At what angle did the portion of the plate exposed stand to the axial line of the lens?

A. Parallel.

21. Q. What do you understand by the axial line of the lens in the last question?

A. It would be the central line of the lens.

22. Q. When a line passes through the center of the lens and strikes upon the portion of the plate exposed, what angle does that line make with the surface of the plate?

A. That is a question of natural philosophy, which I should call parallel; I think the rays converge until they strike the lens and thence run parallel to the plate.

23. Q. In front of the opening of Exhibit 9 I place a card which represents the lens, draw a line through the center of the lens and through the center of the portion of the plate exposed. What angle does that line make with the plate?

A. Right angle.

295 24. Q. State whether or not, in using these sliding plate-holders, you ever exposed the plate at any other angle, with the line passing through the center of the lens, than a right angle.

A. As I used but the center of the lens, there is no case in which I could have done it.

25. Q. State how well these sliding plate-holders operated practically, and what, if any, difficulties you experienced in their use.

A. Generally speaking, I obtained four pictures with the labor of one; but sometimes I lost one or two from careless management of the dark curtain or sheath.

26. Q. Can you produce any picture made by you by the use of such sliding plate-holder?

A. I have at home a portrait of my mother, now dead, taken by it, and one of my son, a fac simile of which I do show you, having loaned the original to Mr. Tompkins, of Grand Rapids, Michigan, in a defendant in a suit now pending on this patent. On the back of this, according to my custom, I have written the date on which it was taken, as shown in the fac simile. This date was written on it at the time it was taken.

(Offered in evidence, and marked Def'ts' Exh. No. 10, B. T. V., S. E.)

27. Q. What became of the cameras and sliding plate-holders you have described?

A. I had sold them some time previous—but have always understood they were burnt with the gallery. The legislative records and all other pictures I have mentioned were all burnt up by this great fire. The fire I refer to occurred at the time of the evacuation of Richmond by General Lee.

28. Q. Do you know any person whom you have lately seen whose picture was taken by the use of these sliding plate-holders?

A. Judges Fultz and Sheffer. I can't recall any more at present.

29. Q. Did you, while in the business, communicate to any person or persons how to make or use these sliding plate-holders; and, if so, who?

296 A. I did so to many—to John Grubb, James Ellis, Richard Sanxay, and to many others whose names I cannot recollect. I showed them both how to make and use them.

WM. A. PRATT.

Sworn and subscribed to the 1st day of September, A. D. 1874.

B. T. VETTERLEIN,
Special Examiner.

Adjourned to September 2d, 1874, by consent, at 11 a. m.

NEW YORK, *Sept.* 2, 1874—11 a. m.

Met pursuant to adjournment.

Present, counsel as before.

And the witness, W. A. PRATT, in answer to further interrogatories propounded by Mr. BLAKE, says:

30. Q. When did you open your gallery in Richmond?

A. First of December, 1846.

31. Q. You have stated that you first used a camera with a sliding plate-holder at Alexandria, in the year 1845. From that time till you moved to Richmond in 1846 did you continue at Alexandria; and, if not, where were you?

A. At various points taking pictures, as a traveling operator.

32. Q. After inventing this sliding plate-holder in 1845 did you use it at Alexandria and on your travels; and, if yea, for what class of pictures, and how frequently?

A. Yes; I used it publicly for breast-pins and lockets, and for about one-third of my business.

33. Q. While so using it did you conceal it or keep it secret, or did all persons have access to it, or how many persons?

297 A. I gave it freely to the profession and to no others. There was no secret made of it. I recall the name of another operator, who, I think, learnt from me the use of this plate-holder. His name is Zealy, of Orangeburg, South Carolina. He was a pupil of mine, I think, in 1845.

And being cross-examined by Mr. ABBOTT, says:

34. X Q. By whom was model Exhibit No. 9 made?

A. It was made at Mr. Anthony's factory from a drawing furnished by me.

35. X Q. Have you, and will you produce, that drawing?

A. I cannot produce the drawing. The model was not completed yesterday, and I had it completed at Mr. Anthony's factory myself.

36. X Q. What has been done to this model since yesterday?

A. The inner shield has been made and the sheath to shut off the light.

37. X Q. Please point out, so that the same may be identified, those parts which in the above answer you call "the inner shield" and "the sheath," and which you say have been made since yesterday.

A. The parts marked "tin or sheet-iron shield," the "paste-board frame," and "sheath to shut off light." These are the parts I had made yesterday.

38. X Q. Then they were not made since yesterday, as stated in your above answer, were they?

A. They were made yesterday.

39. X Q. Where is the drawing referred to in answer to 35 X-question?

A. I do not know. Mr. Anthony, I think, stated that he had mislaid it.

04. X Q. When and why did he so state?

A. Yesterday morning. I can't answer "why." He had not it, I suppose.

41. X Q. When did you arrive in the city of New York?

A. Yesterday morning about six o'clock.

298 42. X Q. When did you prepare the drawing you refer to?

A. About a year ago.

43. X Q. For what purpose?

A. I presume Mr. Anthony wanted to make a model.

44. X Q. Where was it prepared?

A. In Stanton, Virginia.

45. X Q. When was it furnished to Mr. Anthony?

A. About a year ago.

46. X Q. Have you seen either of the Messieurs Anthony, or any one acting in their behalf, within a year and a half prior to yesterday?

A. Yes.

47. X Q. Which of them and when and where?

A. Both of them, at their own establishment, about nine months ago, I think.

48. X Q. In relation to this suit or to the patent involved in it?

A. I think I called to give the drawing to them; I think that was my business.

49. X Q. Had you seen them or either of them previously to that time within a year and a half?

A. No, sir.

50. X Q. Was not that drawing made, either wholly or in part, at the time you were in this city about nine months since?

A. No, sir; neither in whole nor in part in this city.

51. X Q. Was not the drawing furnished in order to enable the Anthonys to have a model made which should exhibit the plate-holder used by you?

A. It was.

52. X Q. Who made the plate-holder spoken of by you in this examination as having been first used by you in Alexandria?

A. Some cabinet-maker; I can't tell you who.

53. X Q. Did you ever have more than one such plate-holder made?

A. Yes, sir.

54. X Q. How many, and by whom, and when and where made?

299 A. I cannot tell how many. They were made in all sorts of places and by all sorts of mechanics and at all sorts of times.

55. X Q. Can you not give a more definite answer to that question?

A. I cannot.

56. X Q. Can you give the name and place of residence or business (at the present time) of any person who ever made such a plate-holder for you?

A. I think one man resides now in King street, Alexandria, and follows the same business of cabinet-maker. I can't remember his name. I think the name of another is Binford, of Richmond.

57. X Q. When and where did you last see said "Binford"?

A. About 1856, I think.

58. X Q. Do you mean to be understood as testifying that said Binford ever made such a plate-holder as you have described?

A. He did various jobs for me, and I think most probably made one of them. I can't be positive.

59. X Q. Can you give me the Christian name of said Binford, or, if not, can you describe his present place of residence or business?

A. I cannot.

60. X Q. Was the Mr. Zealy referred to in your answer to the 33d question an employé of yours?

A. No, sir; a pupil.

61. X Q. When did "John Grubb," named in your answer to the 29th question, work for you?

A. In the latter part of 1845 and the early part of 1846.

62. X Q. Where is he now?

A. Dead.

63. X Q. To your knowledge, after he left your employ, did he ever use such a plate-holder as you have described?

A. I believe he did.

64. X Q. My question is whether, to your knowledge, he did?

A. He had one of my plate-holders of this kind, and to the best of my knowledge he used it as long as he continued in business.

300 65. X Q. Did you ever see him use it after he left your employment; if so, when and where, and in whose presence?

A. Yes; I have seen him in Richmond, in my own gallery. I can't say in whose presence. About 1850 was the time when he returned to my service. It was in the presence of my other operator, Joseph Caskey.

66. X Q. When was James Ellis, also named in your answer to 29th question, in your employ?

A. In 1851 or 1852, I think.

67. X Q. Where is he now?

A. I do not know.

68. X Q. When did you last have any knowledge or information as to his whereabouts, and where was he at that time?

A. I cannot recollect.

69. X Q. When was Richard Sanxay, also named in your answer to the 29th interrogatory, in your employment, and where is he now?

A. I think he was in my employ in 1854. I have heard that he is dead.

70. X Q. When was Joseph Caskey, named in answer to the 65th interrogatory, in your employment, and where is he?

A. He was in my employment about three or four years, ending about 1854, as near as I can recollect. He is dead also.

71. X Q. Is the portrait of your mother, referred to in your answer

to the 26th question, a single picture or are there more than one upon the same plate or card?

A. It was what we called a quadruple—four on the same plate.

72. X Q. Where is that quadruple?

A. In my own possession—in my own house.

73. X Q. When was it taken?

A. About 24 years ago.

74. X Q. Do you mean to be understood that you have at your residence in Stanton four pictures of your mother on one and the same plate or card?

A. I do.

301 75. X Q. And that the same were taken about 24 years ago by you?

A. Yes, sir.

76. X Q. Is the date or time when the same were taken expressed thereon?

A. No, sir.

77. X Q. What means have you, if any, of fixing the time when the same were taken?

A. My son was about six years old at the time; at the same time his grandmother was 60; and the pictures were taken partially to commemorate the event as far as I can recollect.

78. X Q. Is your mother now living?

A. No, sir.

79. X Q. Were those pictures of your mother taken with the same or a similar plate-holder, and in the same or a similar manner as the pictures of your son referred to in your examination of yesterday?

A. Yes, sir.

80. X Q. I suppose an exact copy or fac-simile of the pictures of your mother can be readily taken, can there not be?

A. Yes; a perfect fac-simile, but not generally as good as the originals.

81. X Q. To what do you refer in your statement, "not generally as good as the originals?"

A. Not so clear and high-finished from the glare of light coming on them sometimes by accident.

82. X Q. On your return home will you have the kindness to have three copies of those pictures made, and marked for identification with the initials of your name, and forwarded to the examiner taking your deposition or to Messrs. Keller & Blake, defendants' counsel, one of which to be an exhibit in this case, and one for the use of the counsel of each party?

A. Certainly.

83. X Q. Will you have the kindness, also, to send two negatives of said pictures, one for the counsel of each party? And will you please have the negative and the picture embrace or include the whole of what is shown on the plate containing your mother's pictures—I mean including the border and everthing—I mean the whole surface of the plate? 302

A. Certainly.

84. X Q. Have you given your testimony in the case against Mr. Tompkins, referred to in answer to 26th question?

A. Yes; before a commissioner.

85. X Q. Was Mr. Tompkins at your place at or before the time you gave your testimony?

A. He was.

86. X Q. Did you show him the said pictures of your mother?

A. I did. That is, I showed them to Judge Fultz, and he saw them at the same time.

87. X Q. Was Judge Fultz the commissioner who took your depositions?

A. Yes.

88. X Q. Do you remember the size of the lens and length of the focus used in taking said pictures of your son and your mother? If yea, please state the size and length as accurately as you can.

A. It was what is called a medium Voightlander.

88. X Q. Please state the size you understand or mean by the word "medium."

A. I mean one-sixth of the whole plate as manufactured and imported by all respectable houses in the trade, and known as the medium "Voightlander."

90. X Q. Please refer to Exhibit No. 10, named in answer to question 26, and state (if you know) when, where, and by whom it was made.

A. It was made about six or seven months ago in Sta'nton by Mr. Tompkins, in the gallery at that place, from a picture of mine which I loaned him.

91. X Q. Before or after you gave your deposition?

A. Before or after, I can't say exactly which.

92. X Q. Is it an accurate copy or fac-simile of all that was on the original plate when the copy was taken?

A. As near as I can see it is.

WM. A. PRATT.

Sworn and subscribed to the 2d day of September, A. D, 1874.

B. T. VETTERLEIN, *S. Examiner.*

303 **JOSEPH H. TOMPKINS**, a witness produced on the part of the defendants, being first duly sworn, in answer to interrogatories propounded by Mr. BLAKE, says:

1. Q. What is your name, age, residence, and occupation?

A. Joseph H. Tompkins; I am 49 years of age; I reside at Grand Rapids, Michigan; I am a photographer.

2. Q. Are you a defendant in a suit brought on this patent in the State of Michigan?

A. I am.

3. Q. Did you at any time receive from Mr. W. A. Pratt, who has been sworn in this cause, a picture of which Exhibit 10 is a reproduction?

A. The original of Exhibit 10 was filed in my presence with a United States commissioner, at Sta'nton, Virginia, on the 8th or 9th of December, 1873, as an exhibit in the suit in which I am acting as defendant.

4. Q. Did you make a copy of this original; and if yea, when, where, and by what process?

A. I made several copies of the original daguerreotype; the first copy I assisted in making at Sta'nton, Virginia, in the gallery of Mr. Clinedinst, on the 8th of December, I think, 1873; it was an ambrotype copy. I afterwards made photographic copies of the same daguerreotype at my gallery at Grand Rapids, Michigan, one of which is Defendants' Exhibit No. 10, filed in this cause. In June I made other photographic copies from the original daguerreotype heretofore mentioned, a copy of which I herewith produce.

(Copy offered in evidence and marked Defendant's Exhibit No. 11, B. T. V., s. examiner.)

5. Q. In Exhibit 10 there is around the top and bottom a rounding line of white beads, while in Exhibit 11 these beads are wanting and sloping corners are shown; there are also minor differences between 10 and 11. Please state how you account for these.

A. I account for them from the fact that Exhibit 10 was taken while the brass mat covered the edges of the plate and the beads were in the mat. In Exhibit No. 11 the brass mat is left off and only the 304 surface of the entire plate is shown, except the heads of some tacks which are shown by a ×. In Exhibit Def't No. 10 in this case the words "Exhibit 47," and also in Exhibit 11 in this case, the figures "47" were scratched in the negative to identify the copy and were not in the original daguerreotype. I ought to add that there are some scratches across the face of Exhibit No. 11 which do not appear in Exhibit 10. These scratches were made subsequent to the copying of Exhibit 10 accidentally.

And being cross-examined by Mr. ABBOTT, says:

6. X Q. After you shall have returned home will you have the kindness, at your earliest convenience, to make for the plaintiffs or their counsel in this case, as good and accurate negative as you can of the said original and of the same size as the original and including all of the original, except what may be necessarily concealed by tacks, and mark the same on the back for identification with the initials of your name?

A. The photograph herewith produced, marked Exhibit 11 in this case, is probably as good a copy as I can make, except that the margins have been trimmed off, and if counsel desire I can furnish him with a negative which shall show more of the margin; otherwise I cannot better this picture.

(Counsel for complainant states that he does not doubt in the least the correctness of the opinion expressed above by the witness, nor does he doubt that Exhibit 11 is as good and as accurate a copy as can be made, but being desirous to have a negative which shall include all from the original plate, he will depend on receiving from witness a negative as asked for in 6 X-question and the latter part of the answer thereto.

J. H. TOMPKINS.

Sworn and subscribed to the 2d day of September, 1874.

B. T. VETTERLEIN,
Spec. Examiner.

305 And the witness E. B. FOSTER, being produced for cross-examination, in answer to interrogatories propounded by Mr. ABBOTT, says:

15. X Q. Please refer to your answers to the second and third interrogatories, and then state how long you were in the employ of said Philip Haas.

A. I was with him from March, 1847, till the fall of 1852.

16. X Q. In 1864 did you give your testimony in the case of Simon Wing against Charles F. Richardson, in equity, which case related to the same patent as the present?

A. Yes, sir.

17. X Q. Did said Philip Haas also give his testimony in the same case, and when you were present?

A. Yes, sir.

18. X Q. In the examination of said Haas on that occasion and also in your examination, was there produced a picture of said Haas' wife?

A. Yes, sir.

19. X Q. Was said picture of said Haas' wife made in the gallery with the same or similar apparatus, and in the same or similar manner as described in your direct examination in this case?

A. I was told by Haas it was made by the same. I did not see it made.

20. X Q. Was the original a photograph or daguerrotype?

A. Daguerrotype.

21. X Q. When and where did you first see the original, according to your best recollection?

A. In Haas' gallery, in 1847.

22. X Q. Did not said Haas, in his testimony aforesaid, state that he made it as early as 1847, and with such apparatus and in such manner as you have described in your direct examination?

A. I don't remember whether he stated that in his examination or not; the picture was there when I went there in March, 1847, and he told me he had made it with the same apparatus.

(Latter part of answer objected to as hearsay.)

306 23. X Q. Did you make a copy of that original picture?

A. I did.

24. X Q. Was not the picture produced and a copy made by you, presented and filed as an exhibit, as having been made by such apparatus and in such manner as described in your direct examination?

(Objected to as immaterial.)

A. The original was made by such apparatus.

25. X Q. And did not said Haas, in his said testimony, state that he made it with the apparatus described in your direct examination?

(Objected to as hearsay and as not being the proper way of proving what said Haas testified.)

A. He did.

26. X Q. Please examine picture now shown you, and to be marked Exhibit 12, and state whether the same is a copy of the said picture of Haas' wife.

(Objected to as immaterial.)

A. It is.

(Picture offered in evidence and marked Exhibit No. 12, B. T. V., spec. ex'r.)

27. X Q. And did not you make the copy filed in that case?

(Same objection.)

A. I did.

28. X Q. While you were at work in said Haas' gallery was there any concealment or privacy in the use of the camera or apparatus described by you in your direct examination?

A. No, sir; not that I remember.

28. X Q. Was it used openly and in the same way that cameras are ordinarily used?

A. Yes; whenever occasion required the use of it.

30. X Q. How frequently was said apparatus used?

307 A. I don't remember; it was only used in making locket pictures.

31. X Q. Was Charles H. Williamson in the employment of said Haas and at work in the same gallery with you while you were in said Haas' employ?

A. For a short time in 1849.

32. X Q. Was he not in the latter part of 1846 and also in 1847?

A. Not to my knowledge.

33. X Q. Is there any paper or other record or fact by which you will be enabled to state, with any degree of certainty, as to the time when and how long said Williamson was employed in that gallery?

A. To the best of my recollection he was employed about six weeks, in 1849, when Mr. Haas was sick with small-pox.

And being further examined by Mr. BLAKE says:

34. Re-D. Q. In your answer to the 24th X-question, you say that the original of the picture of Mr. Haas' wife was made by the apparatus described in your direct examination. Do you make this statement because you saw the picture made or because you have been so told?

A. Because I was told.

35. Re-D. Q. When you made Exhibit 12 was there a brass mat around the exterior of the four pictures, or was there not?

A. I don't remember making this copy. I don't think this is the one.

And being further cross-examined by Mr. ABBOTT, says:

36. X X Q. You often saw several pictures made on one plate by the apparatus described in your direct examination, did you not?

A. Yes, sir.

37. X X Q. And you made a copy of a picture of said Haas' wife for use in the Richardson case, did you not?

(Objected to as immaterial.)

308 A. As near as I can remember I did.

38. X X Q. Now, from your knowledge of pictures made by that apparatus, are you not satisfied that the said picture of Haas' wife was made with that apparatus?

A. Yes, sir.

E. B. FOSTER.

Sworn and subscribed to the 2d September, A. D. 1874.

B. T. VETTERLEIN,
Special Examiner.

Adjourned, by consent, to Sept. 3, 1874, at 11 a. m.

NEW YORK, *Sept.* 3, 1874—11 a. m.

Met pursuant to adjournment.

Present, Mr. Keller, of counsel with defendants, and Mr. Abbott, of counsel with complainants.

Professor HENRY MORTON, a witness produced on the part of the defendants, being first duly sworn, in answer to interrogatories propounded by Mr. KELLER, says:

1. Q. What is your name, age, residence, and profession?

A. Henry Morton; I am 38 years of age; I reside in Hoboken, New Jersey; I am president of the Stevens Institute of Technology of Hoboken, New Jersey.

2. Q. State what, if any, experience you have had in the art of photography.

A. In connection with my scientific work, for many years past I have had frequent occasion to make photographs, and in 1869 I took charge of one of the government expeditions to make photographic observations of the solar eclipse of August the 7th. I have written many articles on the optical relations of photographic and other like instruments, which have been published in the scientific journals of this country and Europe.

3. Q. Are you acquainted with the description of the alleged
309 invention described in the plaintiff's patent; and, if yea, state whether there be any difference in the taking of a series of pictures; whether the plate is shifted relatively to the lens or the lens relatively to the plate; and if you shall state that there is a difference, state fully what such difference is and what results therefrom, the objects in both cases remaining stationary?

A. I have read the specifications and examined the drawings and models referred to, and consider that there are very material differences in the two cases.

These differences I would describe under two heads: Firstly. When the plate is moved and the lens remains stationary, it is possible to utilize the entire field of the lens in each picture, to obtain a series of pictures absolutely identical, and in each case to have the lens operate under the most favorable condition. Where, however, the lens is moved, it is impossible to make its entire field available in more than one picture, to obtain any two absolutely identical pictures, or to use the lens under its most favorable conditions in more than one picture of the series made on one plate.

To explain the views above stated, I would have reference to a drawing marked Exhibit Morton No. 1. In this let L represent a lens, whose entire field is occupied by an object, A B, so placed that its center is in line with the principal optical axis of the lens $C\ C^1$. By well-known optical laws we know that under these circumstances, supposing the lens free of all error, an image would be formed, as indicated by $B^1\ A^1$, and that a series of such images produced on various parts of a plate brought successively into the position $A^1\ B^1$ must be absolutely identical as far as the action of the lens is concerned, and would in each case be under the most favorable conditions for the given lens.

If now we desire to produce a second image on the same plate by a movement of the lens, it is evident that the lens must be shifted to such a distance as is indicated at L^1.

Under these circumstances, however, as the drawing shows, none of the rays from that part of the object near B could possibly pass
310 through the lens at L^1, whose entire field, it will be remembered, is included within the angle A L B or its equivalent.

Drawing a line DD^1 through the center of the lens parallel to BB^1 we in fact see that no part of the object from D to B could produce an image on the plate, but that only a partial image $D^1\ A^1$ would be formed.

In practice, of course, a better effect than this would be obtained by, as it were, compromising the loss, and making the first picture with the object to the left; but we should then sacrifice a part of the field of the lens on the right in the first picture and a part to the left in the second, and in both places the lens would not be in the most favorable position.

Secondly. In order to show the nature of the error introduced in the picture taken by a lens so placed that the center of the object is not in line with the axis of the lens, I would refer to a drawing marked Exhibit Morton No. 2.

In this A C, D E, and F H represent three equal spheres with their centers in the same line; O the centre of an absolutely correct lens, and the line $H^1\ A^1$ the surface of the plate on which the picture is to be taken. Under these conditions the right lines $A\ A^1$, $C\ C^1$, $D\ D^1$, and cetera, will correctly represent the axes of the pencils of light by which the images of the different points in the object will be produced.

From a mere inspection of the drawing it will then appear that while the image of the central sphere, D E, will be a circle, being the section of a cone, at right angles to its axis the images H^1, F^1, C^1, A^1, of the spheres F H and A C will be ellipses, being sections of cones not at right angles to their axes.

To show that this theoretical conclusion is true in practice, I have prepared a photograph, of which Exhibit Morton No. 3 is the negative, and Exhibit Morton No. 4 is a print.

This I made by placing five billiard balls in contact with a straight-edge upon a level table, and taking a photograph of them with a lens known as a "Dalmayer Wide-angle Rec*it*linear No. 1," whose focus was about ten inches.

311 In this it will be seen that while the centre ball produces a circular image, or looks like a true sphere in the picture, those at the extreme edge are decidedly oval or egg-shape, and in fact differ conspicuously in their vertical and horizontal diameters.

In further illustration of the same, I would refer to a work on photography by Doctor Herman Vogel, of Berlin, entitled "Die Chemischen Wirkungen des Lichts und die Photographic in Ihrer Anwendung in Kunst, Wissenschaft und Industrie," published in Leipzig by F. A. Brockhaus, 1874, in which, on page 118, and elsewhere, the same subject is discussed; and also to Exhibit Morton No. 5, a photograph made by Dr. Vogel, and given to me by him, illustrating the same conditions as Exhibit Morton No. 4, though in a more striking manner, in consequence of being made with a lens of a shorter focus.

Further to illustrate the effect which the conditions above explained would produce in actual portraiture, I submit the two photographs, marked "Exhibits No. 6 and 7," also made by Doctor Vogel, and given to me by him, in which No. 6 is a picture of a bas-relief taken with a lens of long focus, of which only a small part in the center of the field was occupied by the image, and in which, consequently, there is very little of the distortion above alluded to.

No. 7 is a picture of the same bas-relief, taken with a lens of a shorter focus, in which, consequently, nearly the entire field was occupied by the image.

By a comparison of the faces and figures at the extreme right and left of No. 7, with the corresponding ones in No. 6, this distortion will be easily recognized.

(The several Exhibits referred to in the answer, offered in evidence, and marked respectively Morton Nos. 1, 2, 3, 4, 5, 6, 7, B. T. V., s. ex'r.)

4. Q. To enable a party to take a series of pictures by moving the lens relatively to the plate instead of the plate relatively to the lens, what, if anything, would be required to be done to avoid the distortions referred to in your answer to the last preceding question—if such distortions can be prevented? 312

A. The only method of preventing such distortion, that I think of at present, would be a corresponding movement of the object, or, in the case of portrait photography, to which I presume this process has reference, the sitter.

5. Q. State whether you know of any mechanism by which an object—and in case of portrait the sitter—could be moved accurately to correspond with the movement of the lens, so as to avoid the distortion?

A. I do not know of any such.

6. Q. I find in the plaintiffs' patent, in the paragraph just preceding the claim, a reference to the alternative of moving the lens instead of the plate. Do you find in the specification of that patent, or in the drawing, any description or representation of any means by which the object will be moved correspondingly with the movement of the lens for taking a series of pictures?

A. I do not find any such in the specifications or drawings which I have examined.

Cross-examination waived.

HENRY MORTON.

Sworn and subscribed to the 3d day of September, 1874.

B. T. VETTERLEIN,
Special Examiner.

CHARLES THAYER, a witness produced on the part of the defendants, being first duly sworn, in answer to interrogatories propounded by Mr. KELLER, says:

1. Q. What is your name, age, residence, and occupation?

A. Charles Thayer; I am 53 years of age; I reside at Braintree, Massachusetts; I am at present engaged in the clothes-wringer business.

2. Q. Have you ever been engaged in the photographic business; and, if so, from what time to what time, and in what part of the country?

313 A. I have been so engaged in 1848 until 1869, at Charlestown, Massachusetts, most of the time.

3. Q. While so engaged did you ever take more than one picture in the camera, without removing the plate-holder from the camera; and, if so, when first?

A. Yes; the first that I have any recollection of, or anything I could show, was some twenty-five or twenty-six years ago.

4. Q. Will you describe how it was done?

A. I have two processes. One was to take them on the center of the plate, and the other was a very little one side. I used the center of the plate generally for copying lockets and rings; I used one side generally for taking pictures direct from a sitter.

5. Q. Describe the method which you used for taking portraits from a sitter.

A. I had a diaphragm to fit the front of the camera, in front, to go between the plate and the lens, with a hole-opening the size I wished. That for individuals the opening was nearest to the first half, on the side in which the plate-holder was introduced; then the plate-holder was slid into use the first half, and then further slid into use the second half. That is the way I made two on a plate.

6. Q. Did you have any means by which you regulated the distance you required the plate-holder for the first picture?

A. I had marks on the plate-holder to show.

7. Q. Did you have anything to protect the plate from the action of the light while you inserted the first half?

A. Yes; we always had a slide in the plate-holder.

8. Q. What did you do with that slide after you inserted the plate-holder the first half way?

A. I generally pulled it out one-half way and left it until I had taken one picture.

9. Q. After taking the first picture, state what you did preparatory to taking the second picture?

A. I moved the plate-holder into the box, and moved the other half of the slide, so as to expose the other half of the plate.

314 10. Q. When you did that, what protected that part of the plate on which the first picture was taken from the indirect rays of light from the lens?

A. The diaphragm that I have spoken of before, which I had put into the box, covered that half of the plate.

11. Q. How long did you use such an instrument in the manner you have described?

A. I think some 23 years; although the box was somewhat changed, the principle was the same.

12. Q. State, as near as you can, in what year you first used such an instrument in the manner you have just described?

A. I should think it was 1848 or 1849—I could not tell which; the first that I have anything to show was in one of those years.

13. Q. What is it that you have to show, that enables you to fix the time?

A. I have a picture of a lady, two pictures on the same plate; one with her artificial teeth in her hand, and the other with the teeth in her mouth, to show the effect of the dentist's work.

14. Q. How does that picture enable you to fix the time you used such an instrument as you have described?

A. By the age of my oldest daughter; it was made in the same year in which she was born; and from the place I was in at that time, and where I moved from the same winter; and also from the statement of the dentist, he having a record of the money he paid for the work.

And being cross-examined by Mr. ABBOTT, says:

15. X Q. Please give the name and place of residence of the dentist referred to in your last answer.

A. It was Doctor Waters, whose office is on Beacon street, in Boston, about half way from Tremont street to the State House; he resides in one of the suburbs.

16. X Q. Was Dr. Waters present when those pictures were taken?

A. He was.

17. X Q. Please state as accurately as you can the place where they were taken.

A. At the corner of Sudbury and Court streets, Boston.

315 18. X Q. Were they taken in the same manner you were accustomed to take pictures prior to 1857, when you took more than one upon the same plate?

A. There was a very little alteration in that; the diaphragm, if I recollect right, was pushed in a little to break off the marks between them, and using a dark ground work; the plate was taken out to see if she was sitting in the right position, although the plate was slid in in the same way as if the plate had not been taken out.

19. X Q. These differences, I suppose, made no changes in the position of the sitter, and no change in the position of that part of the plate on which each picture was taken, in relation to the lens or the focus of the lens, did they?

A. It made no difference that I know of.

20. X Q. Have you these pictures here?

A. No, sir; I have not. I came away unexpectedly. When telegraphed for I was not at home, and came on here directly instead of first going home; but I can furnish them if you wish them.

21. X Q. Have you the negative, or a negative, from which those pictures can be printed?

A. I have copies of them.

22. X Q. Where, or in whose possession, is the original?

A. In Dr. Waters'.

23. X Q. Can you produce any other plate or card having two pictures thereon, and made by you prior to 1858?

A. I don't think of any now.

24. X Q. Did you give an affidavit or deposition in June, 1868, before, or verified before, Winslow Warren, jr., in Boston, to be used in the application for the extension of the said Southworth patent?

A. No one that I know of, for any such purpose.

25. X Q. Did you, in June, 1868, or at any other time, before said Warren, give or make oath to an affidavit or deposition having any relation to the said Southworth patent?

A. I did. I gave a deposition of the way I worked, made out by Southworth, and signed before some justice. I did not look it over myself; it was only read to me.

316 26. X Q. Read to you by whom?

A. By Mr. Southworth, I am very sure.

27. X Q. Was it not read to you by the magistrate or commissioner before whom you appeared?

A. I think not; I think it was taken up by him and looked at, and it was read by Mr. Southworth. Mr. Southworth could read it easier, being his handwriting, I think.

28. X Q. Are you acquainted with Winslow Warren, jr., whose office is on Court street, Boston?

A. No, sir.

29. X Q. Do you remember where that affidavit or deposition was signed and made oath to by you?

A. Nearly in front of the court-house, in Boston.

30. X Q. In some one's office?

A. I don't recollect.

31. X Q. Do you mean to be understood as testifying that said affidavit or deposition was not read to you by the commissioner, before whom you appeared, and before you made oath to?

A. I mean to be understood that it was not read by him in my hearing.

32. X Q. Have you signed or made oath to more than one affidavit or deposition in Boston having any relation to the said Southworth patent?

A. I have not.

33. X Q. Please examine the last half of page 48, and page 49, and the first three-quarters of page 50 of the printed record of the testimony in behalf of the extension of the patent of Albert S. Southworth, and state whether that is a correct copy of your said affidavit or deposition, so far as you can recollect the same. The same being as follows:

UNITED STATES OF AMERICA,
District of Mass., ss:

I, Charles Thayer, of the city of Charlestown, county of Middlesex, and State of Massachusetts, aged forty-seven years, on oath, do depose and say: I am in the business of photographing, at No. eighty-two Main street, in said city of Charlestown; that there is no other 317 photographer by the name of Charles Thayer, or having the name of Thayer, in this city, nor has there been this eighteen years past. I am acquainted with the so-called multiplying cameras, sold by Mess. Wing & Ormsbee, under the patent of Albert S. Southworth, and understand their "claims." About nineteen years ago this season I made four pictures on a plate, using the ordinary camera and plate-holder belonging to it, by turning the camera down upon its side. I inserted a piece of card-board in front of the plate-holder, having an aperture cut of size suitable to open only upon no more than one-fourth of the length of the plate, as it was slid into the camera in the plate-holder. Through this opening in the card-board the light from objects to be pictured formed its image in focus upon the plate, by drawing the slide of the holder out about one-fourth. After suitable timing the holder was slid so that the image fell upon a portion of the next fourth of the plate, and the tin slide covering was drawn accordingly, so as to take a picture upon the second fourth. The plate was then taken into the dark room and changed end for end, then returned to the camera, and inserted just as before, and the next two trials were made. The pictures were seen, when finished, with two heads in one direction, and two in the opposite direction, and were cut apart. I managed in this way for a year or two. I then took another piece of card-board and cut the aperture in the center of one-quarter of the plate, a quarter nearest that part of the camera where the plate-holder is first inserted. After adjusting the image through this aperture I slid the plate so that the center of one-quarter of the plate came opposite the center of the aperture in the card-board. After proper exposure, I slid the frame or plate-holder so that another quarter of the plate came opposite the aperture in the card-board. I now took out my plate-holder and turned the card-board top down, and then proceeded to fill up the two remaining quarters, after readjusting the camera by raising or lowering it. In this way the axis of the lens was not on a line with the center of one-quarter of the plate, but was on a line to the point in the 318 plate where the perpendicular and horizontal lines would intersect if the plate were divided thus into fourths, or on a line to where the four quarters come together. In this way of taking four upon a plate, the camera stood aslant towards the object to be pictured, both horizontally and perpendicularly. This plan I pursued for several years after I stopped taking them as first described, with heads in opposite directions. I have none of the apparatus with which I made these experiments now on hand, nor have I seen any of it for the last ten years that I know of.

I have never tested (by any experiments for that purpose) the difference in perfection between a picture made in the axis of the lens and one made at an angle equal to the difference between the center of a plate and the center of a fourth of the same plate; but I received the idea, in working with lenses, that the center or axis gave the best image. Until I saw the Wing & Ormsbee cameras, "Albert S. Southworth, patentee," I never saw or heard of any cameras except those in common use eighteen or twenty years since. The first likeness I ever saw made with a camera was by Mr. Southworth, about twenty-four years since. My rooms in Charlestown are about a mile, perhaps a little more, from his in Boston, and have been for about eighteen years. I have occasionally visited his gallery. I never made any public exhibition of my experiments in multiplying pictures, nor did I ever publish any account of them, nor in any way give them to the public. My first experiments were made nineteen or twenty years since—it may have been nineteen years since. Mr. Albert S. Southworth has requested me to recall dates, and state the facts and circumstances respecting my experiments, and I have done so, to the best of my abilities.

CHARLES THAYER.

UNITED STATES OF AMERICA,
District of Massachusetts, ss:

On this 16th day of June, 1868, personally appeared the above-named Charles Thayer, and the above affidavit being read over to him 319 by me, he subscribed the same in my presence, and made oath that the statements therein contained were true.

Before me,

WINSLOW WARREN, JR.,
Com'r of U. S. Circ. Court for the Dist. of Mass.

A. It is only a part of a statement, as far as I recollect, was read to me.

CHARLES THAYER.

Sworn and subscribed to, the 3d day of September, A. D. 1874.

B. T. VETTERLEIN,
Spec. Exam.

Adjourned to Sept. 4, 1874, 11 A. M.

NEW YORK, *Sept.* 4, 1874—11 a. m.

Met pursuant to adjournment.

Present, counsel as before.

EDWARD S. DUNSHEE, a witness produced on the part of the defendants, being first duly sworn, in answer to interrogatories propounded by Mr. KELLER, says:

1. Q. What is your name, age, residence, and occupation?

A. Edward S. Dunshee; I am 51 years of age; I reside in Boston, Massachusetts; I am a photographer.

2. Q. State how long you have been in that business?

A. Since October, 1841.

(It is hereby stipulated and agreed by and between the counsel for the respective parties, that the deposition of Edward S. Dunshee, taken in the suit of Simon Wing et als. against Joseph H. Tompkins, in the sixth circuit of this court for the western district of Michigan, may be read and used in evidence in this case with like force and effect as if taken herein.)

320 1. Q. What is your name, age, residence, and occupation?

A. My name is Edward S. Dunshee; age, fifty years; reside in Boston; I am a photographer.

2. Q. Do you know the parties to this suit?

A. I do.

3. Q. State how long you have known the parties?

A. About two years.

4. Q. Which of the parties have you known during this time?

A. I have known Mr. Wing and Mr. Southworth about two years. I have known Mr. Tompkins, the defendant, since last Thursday.

5. Q. When did you first engage in the business of photographing?

A. October, 1841, I began the business.

6. Q. How long have you followed it?

A. I have followed it ever since.

7. Q. As principal or employé?

A. Principal.

8. Q. Are you acquainted with any method of making more than one photographic picture upon the same plate by bringing different por-

tions of that plate successively into the field of the lens without removing the plate-holder from the camera-box ?

A. I am.

9. Q. Have you, yourself, ever made photographic pictures in this way ?

A. I have.

10. Q. State where you first made them in this way.

A. At the city of Norwich, Connecticut.

11. Q. Can you produce a model of the apparatus used by you in the manner indicated by the last preceding question.

A. I can.

12. Q. Please produce the same, and file it with the examiner as an exhibit in this case, and mark the same Exhibit D, Tompkins.

A. I here produce it.

321 (Witness produced a model, marked Exhibit D, Tompkins, and the examiner set his name and title to the same.)

13. Q. Will you please describe the method by which you operated the camera, of which Exhibit D is a model, so as to produce the result above alluded to in your answer to int. 8, or if you have prepared a written description thereof, please read it ?

A. I have prepared a written description, which is as follows: I focussed the picture above the diaphragm *b*, which I inserted to shut off the light from the lower half of the plate ; then withdrew the focus-glass and put in the plate-holder within about one and a half inches of the bottom of the box; drew the slide about one and a half inches, and took one picture; then dropped the holder to the bottom of the box, drew the slide to the top of the holder, and made the second picture; when brought out I had two impressions on the one-sixth plate, as in the picture herewith produced, marked Exhibit 74, which picture I took a few days since in the manner above described, using for that purpose the box marked Exhibit D, Tompkins.

14. Q. Please file with the examiner Exhibit 74, referred to above as an exhibit in this case ?

A. Here it is.

(The witness produced Exhibit 74, and it is marked by the examiner with his name and title.)

15. Q. Please state if you also used the plate-holder accompanying Exhibit D, and if that was such a holder as was commonly used at that time, and if operated by you as described ?

(Objected to as leading.)

A. I did use that plate-holder, and it was such as was commonly used at that time, and I operated it as I have described.

46. Q. Please state, as nearly as you can, when you made the first picture by the above described process ?

A. In the fall of 1846.

17. Q. Where did you first make such pictures.

322 A. At Norwich, Connecticut.

18. Q. Can you produce a picture or pictures made in the above manner, during the early years of working this method ?

A. I can.

19. Q. Will you produce it or them and file with the examiner in this case, as an exhibit ?

A. I produces it ; it is a picture of my wife before I was married.

(The witness produces a locket with the picture of a lady on one side, and a gentleman on the other.)

20. Q. When was the picture herewith produced taken ?

A. In the fall of 1846.

21. Q. What is the picture on the other side of the locket?

A. It is a daguerreotype of myself.

22. Q. What kind of a picture is the one of your wife?

A. A daguerreotype.

23. Q. Will you file this picture of your wife with the examiner as an exhibit in this case?

A. I will produce a copy of the same and file it.

24. Q. Why not file the original?

A. It belongs to my wife.

25. Q. Please file the copy alluded to and mark it Exhibit 46.

A. Here it is.

(The witness produces a picture marked Exhibit 46, Tompkins, and it is marked by the examiner with his name and title.)

26. Q. When did you make this copy which you file.

A. Last Saturday.

27. Q. How do you fix the date when you made this original picture?

A. I date it back from my marriage, which took place on Sunday, June 13, 1847.

28. Q. About how long before your marriage was the picture taken?

323 A. About eight months.

29. Q. Did you make other pictures more than one on a plate, as above described, in the early years of your photographing?

A. I did.

30. Q. About how many pictures did you make as above, and did you make them as experiments or for sale?

A. I made two, three, and four on a plate at different times; I made these for sale.

31. Q. About how many pictures did you make in the early years of your daguerreotyping, in this way, for sale?

A. I could not tell how many; I used to make all my locket pictures in that way.

32. Q. What did you do with the duplicates made in that way?

A. Sometimes sold them, and sometimes kept them.

33. Q. State about how many pictures you have made?

A. I used to make a good many for lockets.

34. Q. Did you make for sale, for lockets and other purposes, in this way, during your stay at Norwich, dozens, hundreds, or thousands?

(Objected to as leading.)

A. I will say dozens.

35. Q. How long have you continued to make pictures, substantially as described above?

A. Up to the present time.

36. Q. In what portion of the field of the lens did you make Exhibits 46 and 74, and other pictures alluded to above as having been made in the early years of your daguerreotyping, and in the manner described in your answer to question 8?

A. I focussed the head as near the center of the plate as I could get it.

37. Q. What relation to the plate and to each other did the pictures, taken as above described, bear?

A. One picture was right above the other.

38. Q. In what direction did the plate-holder move in taking these pictures?

324 A. It moved down.

39. Q. Did you, or could you, with Exhibit D, Tompkins, make pictures bearing a different relation to each other than as described in your answer to the second preceding question?

A. I could.

40. Q. Please state how different?

A. By putting in a smaller diaphragm and turning the camera down sideways.

41. Q. What relation then would the pictures bear to one another and to the plate?

A. They would be side by side.

42. Q. Did you afterwards modify this method of making two or more pictures, focussed near the center of the field of the lens, in the manner described, so as to make them in a different manner?

(Objected to as leading, and as implying as a fact what is not admitted, and has not been proved or testified to.)

A. I did.

43. Q. Please state what that modified method was?

A. I cut a smaller diaphragm, which left three-quarters of an inch from the focus-glass, and by so doing I used to make two and three impressions by sliding my plate-holder crosswise.

44. Q. What do you mean by the statement, "which left three-quarters of one inch from the center of the focus-glass." Please explain?

A. In turning my camera down sideways and putting my plate in, within three-quarters of an inch of the diaphragm, passing by the diaphragms three-quarters of an inch, I then draw my slide out and make an exposure. After making the exposure I pass my plate-holder again across the center, and draw my slide and make another exposure part way. By this same process I make three impressions on the plate.

45. Q. In what portion of the field of the lens were these last described pictures made?

A. In the center of the focus-glass.

325 46. Q. What prevented the light from acting on the unexposed part of the plate?

A. The diaphragm and the slide.

47. Q. In making these last pictures did you use the same camera and apparatus of which Exhibit D is a model?

A. I did, till 1849.

48. Q. When did you make these last-described pictures in the center of the field of the lens, and where?

(Objected to as implying as fact what is not admitted, and has not been proved or testified to.)

A. In 1848 and 1849, at Fall River, Massachusetts.

49. Q. What do you understand by the center of the focus-glass, as given in your answer to int. 45, and in what portion of the field of the lens was the picture made when you focussed in the center of the glass, as stated above?

A. By making a circle in the center of the focus-glass, and the picture was made in the center of the field.

50. Q. Will you state how the camera used at Fall River differed from Exhibit D?

A. An opening was cut through both sides of the camera, and a shield made there to receive the focus-glass and plate-holder; that shield was made to pass through, which held the focus-glass and plate-holder. After focussing my picture, I placed the plate-holder into the shield pushing then the plate-holder through in the place of the focus-glass; and, as I pushed the plate-holder through the plate-holder removed the focus-glass, and the plate-holder took the place of the focus-glass. By drawing the slide, I would make an impression. In making one or more impressions I put in a pasteboard diaphragm in front of my plate-holder. I would then pass my plate-holder by the diaphragm hole, and make my impression in that way.

51. Q. How large was this diaphragm hole spoken of in your last answer?

A. About one inch in diameter.

52. Q. In what part of the field of the lens was the diaphragm hole alluded to, situated?

326 A. In the center of the card-board.

53. Q. The inquiry is in what part of the field of the lens is the diaphragm hole situated?

A. In the center.

54. Q. About what portion of the plate did you expose at one time through this opening in the diaphragm?

A. From one-third to one-half.

55. Q. Please repeat when and where you made the pictures in the manner just described.

A. At Fall River, in 1849.

56. Q. How long have you continued to make them in that way, substantially?

A. Ever since, as occasion required it.

57. Q. Where did you get the modified box used at Fall River, which you described as having openings at the sides?

A. I bought it of a Scotchman named Gibson, of Fall River.

58. Q. Please repeat what relation the pictures you made by this camera-box, at Fall River, bear to each other and to the plate, as to situation?

A. They would be the same, except as to change of the sitter.

59. Q. Were these pictures made successively on the same plate without removing the plate-holder from the camera-box?

A. They were.

60. Q. Were they made side by side, or one above the other?

A. Side by side.

Cross-examination by J. S. ABBOTT, Esq.:

1. X Q. Is an action pending against you in favor of the above complainants, and for an alleged infringement of the Southworth patent, so called, for multiplying cameras?

A. There seems to be.

2. X Q. Did you not obtain from Grand Rapids a printed form of answer, to aid in preparing your answer?

A. I had one sent to me.

327 3. X Q. Sent by whom?

A. By Mr. Tompkins.

4. X Q. The gentleman here present, and conducting this examination?

A. Yes; I suppose it be him.

5. X Q. Do you furnish any means or aid, or have you agreed so to do, towards the defense of any actions or suits brought on account of an alleged infringement of the said Southworth patent?

A. Only of my knowledge of the business.

6. X Q. Who made the Exhibit D, Tompkins, produced by you here to-day?

A. I could not tell; it looks like Mr. Roberts' manufacture.

7. X Q. Did you see Mr. Roberts, or give him any instructions or directions, in regard to its manufacture?

A. I did not.

8. X Q. Did you furnish to him, or to any one, any camera or apparatus as an aid to the making said Exhibit D, Tompkins?

A. I did not.

9. X Q. How many photographic galleries have you now in which you carry on the photographic business, and in which you make, or cause to be made, photographic pictures?

A. Three.

10. X Q. Where are they?

A. One at 3 Tremont row, one at 323 Washington street, Boston, and one at No. 8 Market street, Lynn.

11. X Q. Have you in either of your galleries or elsewhere, any camera-box or apparatus like Exhibit D, Tompkins; if so, will you produce it here for inspection, and for the purpose of comparing it with said exhibit?

A. I have nothing just like it.

12. X Q. Have you anything very near resembling it; and, if so, will you produce it for the above purpose?

A. I have similar boxes of different styles, and I will show you anything I have.

13. X Q. Will you produce before this examiner for the above purpose, the box or apparatus which you have most nearly resembling Exhibit D, Tompkins?

328 A. If necessary, I can produce the style of boxes I use.

(Complainant's counsel here states that he does not require its production at this moment, but requests the witness to produce, before his examination shall have closed, the box or apparatus most nearly resembling D, Tompkins, which he has.

Defendant objects to the production of the box or apparatus called for, as immaterial and irrelevant to this cause.)

14. X Q. How long have you been engaged in the photographic business, in Boston.

A. Five years and eleven months.

15. X Q. At what particular place in Norwich did you commence that business?

A. I commenced the first at Norwich Falls, one mile out of the city.

16. X Q. How long did you stop at that place?

A. I was there six weeks in a dwelling-house.

17. X Q. Have you any means of stating with definiteness and certainty the exact time that you went to or left that place?

A. I went there in the fall, October, 1845, and in January following, went to the city.

18. X Q. At what particular place in the city of Norwich did you commence the photograph business?

A. I had a room in what was called Hubbard's block, Main street.

19. X Q. How long did you occupy that?

A. I remained there till December, 1847.

20. X Q. Did you hire or own that room?

A. Hired it.

21. X Q. From whom?

A. The owner of the building, Hubbard; I don't recollect his first name.

22. X Q. Did you have any operator or operators, or assistants in your business in that room?

A. I did not.

329 23. X Q. Where did you obtain the camera-box or camera-boxes or apparatus which you used in making pictures while occupying that room?

A. I bought them of Mr. Plumb, of Boston; I sent there for them.

24. X Q. To the same Mr. Plumb now living here?

A. I don't know the man; I never saw him.

25. X Q. Do you know in what business said Plumb was engaged, or in what part of Boston his place of business was when you procured from him said camera-box?

A. I do not; I only know of him by the name of Plumb as being the first daguerreotypist in Boston.

26. X Q. While engaged in the photographic business in said Norwich, did you use, in making pictures, any camera-box or apparatus except what you obtained from said Plumb? If yea, state what, and where you obtained it.

A. I bought a box while I was there made by R. A. Lewis, of New York; I am not positive of the initials of his name.

27. X Q. While engaged in the photographic business in said Norwich, did you make use of any other camera-box or boxes, or apparatus for producing pictures, excepting what you obtained from said Plumb and from said Lewis; if yea, state what, and where, and what date?

A. I did not use any other.

Adjourned to Wednesday, at 9.30 a. m.

WEDNESDAY, *Jan.* 28, 1874.

Met pursuant to adjournment.

28. X Q. The Mr. Plumb referred to by you was a well-known and extensive dealer in camera-boxes at the time when you procured your boxes from him, was he not?

A. I do not know, sir.

29. X Q. How happened you to procure boxes from him?

330 A. Knowing that there was such a person in the business, and knowing no other at that time; in fact I did not know him any further than by hearsay.

30. X Q. Did you at that time, or about that time, see his advertisement as a dealer in camera-boxes?

A. I saw no advertisement; I sent by express, by hearsay, to such a person.

31. X Q. Did you, at or about the same time, or while you was in business in Norwich, see other boxes of said Plumb's make; if so, where?

A. I did not; I could not positively swear that Plumb ever made a box. My first box I got through Mr. Plumb, as reported so to me.

32. X Q. While engaged in business at Norwich, did you see other similar boxes; if so, where?

A. I saw other boxes, made by Lewis & Anthony, in New York.

33. X Q. Please answer the last question propounded?

A. As I said before, I saw camera-boxes made by Lewis & Anthony, in New York, in Norwich. I bought a box at the same time, made by Lewis. My box I had of Plumb, was a square box, and the box I had of Lewis was a square box. It was a box similar to the one I first bought—a quarter-plate box.

34. X Q. Did the box you bought of Lewis have a similar shield or plate-holder, and was it opened in the same manner as the one you had from Plumb?

A. The box I bought, I bought purporting to be a Lewis box, in

Norwich, had three size plate-holders—one-ninth, one-sixth and one-fourth. It had a similar shield to hold my plates, and operated in the same manner as the one I had of Plumb.

35. X Q. When and from whom did you purchase the Lewis box?

A. I bought it in the Spring of 1847, of George Carroll.

36. X Q. State where, if you know, said Carroll is, or where he was when you last knew?

A. He was in Norwich in 1847, the last I knew of him.

37. X Q. What was his business?

A. He was a house-painter by trade.

331 38. X Q. When, where, and by whom were you married?

A. In June 13, 1847, at Norwich, Connecticut, on Sunday, at 2 o'clock, by Rev. Mr. Brown, Universalist minister, at his home, between church service.

39. X Q. Have you any memoranda or means of stating with exactness, the time when you made the picture referred to in the 19th direct interrogatory?

A. The picture was made in the fall of 1846. I have not any memoranda or means of stating with exactness; I know it was made in cold weather.

40. X Q. Can you state with certainty that it was not made in January or February, 1847?

A. It was made in the fall of 1846.

41. X Q. Have you any means or memoranda by which you are enabled to state with certainty that it was made before January, 1847?

A. I know that it was made in the fall of 1846.

42. X Q. Please answer me my last question?

A. I know it was not made in 1847.

43. X Q. Will you please answer my 41st question?

A. I know it was made soon after I hired a room in Hubbard's block in the fall of 1846.

44. X Q. Can you give any further answer to my 41st question?

A. I have given you as correct an answer as I can possibly from my memory.

45. X Q. Will you now produce the camera-box which I yesterday requested the production of?

A. The box is over in my room, in use, and I cannot produce it.

46. X Q. In which of your rooms?

A. At 3 Tremont row.

47. X Q. About how far from the place where you are now giving your testimony?

A. I should judge it was about thirty rods.

48. X Q. Who is using it?

A. I could not swear that any one is now using it; it is in the room for use, in case a customer comes in, by the operator.

49. X Q. How many camera-boxes have you at that place which you use?

332 A. Four.

50. X Q. How many persons are there, at the present time, at that place who are operators, or who are in your employ for the purpose of operating at this present time?

A. I am the operator myself, with an assistant operator.

51. X Q. Since the adjournment yesterday, when you stated that you could produce that box, have you had any interview with or communication from Mr. Tompkins, the defendant in this case?

A. I have not.

52. X Q. Has not said Tompkins been in your gallery or place of business, No. 3 Tremont row, since the adjournment yesterday?

A. He has.

53. X Q. And when you were present?

A. I was there.

54. X Q. Did he not say anything to you? I do not ask now what he said, but whether he said anything?

A. I answer, he went up stairs into the gallery last night. I made no conversation with him myself; I had business to attend to. I asked him to come in in the evening after tea. He did not come. He came in this morning at precisely half-past nine. He asked me if I was ready to go over to the office; we came here. We made no conversation on the way concerning this affair.

(The answer objected to by complainants' counsel as irresponsive.)

55. X Q. Now that you have stated what I did not ask for, but what I expressly excluded in my question, will you please give an answer, and a direct answer, and that only, to my last question?

A. He said nothing to me concerning this affair, while walking between here and the room.

56. X Q. Did he not go with you from this room, at the close of the examination yesterday, to your gallery, at No. 3 Tremont row?

A. I invited him to go to ride from here; after I got to my room I
made up my mind it was too late to go. I had pictures to tone
333 out, which took me from the time I got into my gallery till twenty
minutes past six. When I came down stairs to my reception
room, I found a lady friend with my wife. Mr. Tompkins had gone.

(Objected to by complainants' counsel as irresponsive.)

57. X Q. Please answer my last question.

A. He did.

58. X Q. When you left your gallery this morning was the camera-box referred to in active use? Was any customer at that time present for whom it was to be used?

A. There was no customer, but one had promised to come this forenoon; no time stated.

59. X Q. When did you remove from Norwich, and to what place?

A. In the fall of 1847 I left Norwich, and arrived at Fall River about Dec. 8, 1847.

60. X Q. How long did you remain at Fall River?

A. Somewhere near seven years.

61. X Q. Referring to the 57th direct interrogatory, please give the whole name of said Gibson if you know it, and his place of residence and business when you last knew him?

A. I got acquainted with him when I first went to Fall River. I went into his room in South Main street, over Miss Cobb's millinery store; he lived there, and done his own cooking. I knew his name was Gibson, but I don't know his initials. I made arrangements with him to take pictures in his front room. I staid about one week; I found he knew nothing about the business. I left him and opened a room by myself in Jerry Mason's building, over the crockery store of Gager & Johnson. While there Mr. Gibson came to me to sell his apparatus; I bought his camera, coating-boxes, and mercury-bath. Mr. Gibson left for the West; I have never heard of him since.

62. X Q. How long did you continue in the room in Jerry Mason's building?

A. Not but a few weeks; I could not exactly state. I got a
334 suite of rooms opposite in a granite block. I used the front room

as my daguerreotype office. I had three rooms connected with the gallery, which I kept house in.

63. X Q. Where is that box, or where its remains; when and where did you last see it?

A. I could not tell; I sold it to Thomas Hathaway. I built a daguerrean saloon on wheels, the first one ever known to be built, and furnished the apparatus for the saloon. Mr. Hathaway afterwards bought the saloon, apparatus and all, of me. He run it during the summer months, and he sold out the fall following. This was the last of my knowing anything about it.

64. X Q. When and where did you sell said camera-box to said Hathaway?

A. The trade was made in Fall River. I think I built the saloon in the spring of 1848. I don't remember what town the saloon was in when I sold it. I sold it about three months after I built it.

65. X Q. When and where did you last see said Hathaway or know or hear of his being?

A. He came to Fall River the fall he sold his saloon.

66. X Q. Where was his place of residence, if you know?

A. I think his folks lived in Northbridge, Massachusetts; he was a roving daguerreotypist. The last I heard of him he died and was buried—where I don't know.

68. X Q. To whom did he sell the concern?

A. It is beyond my knowledge?

67. X Q. Please state, to the best of your knowledge or information, of whose manufacture that box was.

A. I think Mr. Gibson told me he made it himself.

69. X Q. Please give as accurate a description of that box as you can.

A. It was a square box, half-size, with a hole cut right through the side. It drew out on the same principle as Exhibit D, Tompkins. It had no screw in the corner. I used to put in blocks of wood between the boxes in focussing different-sized pictures to prevent the box from slipping. The focus-glass and holder passed through the sides of the box instead of up and down.

335 70. X Q. If this box (Exhibit D, Tompkins) were to be turned down on its side, in what respect would the box you bought of Gibson differ from Tompkins'?

A. You would have to put your plate-holder in the top if it was turned down; but it was not made to turn down. The difference is that you can put the plate-holder in either at the top or side. This box, Exhibit D, Tompkins, you can; the other box was made to pass through the side. I further state that you could use the box either way, as necessity required:

71. X Q. Did you use the Gibson box in your gallery at Fall River?

A. I did.

72. X Q. About how long?

A. Probably about three or four months. I did not use it continually.

73. X Q. Did you employ operators in your gallery at that time?

A. I did not.

74. X Q. Can you give the name and residence of any living person who ever saw you make with that box successive pictures on the same plate?

A. I can.

75. X Q. Please give the name and residence of all such persons.

A. Oliver A. Gager, of Fall River, then; now resides in New York. I don't know that I can give the names of any particular persons who saw me use it. I used it every day two or three months in connection with my other camera.

(Complainants' counsel objects to all the above answer except the first sentence.)

76. X Q. Please describe as accurately and exactly as you can, and step by step, distinctly, how you took pictures with the Gibson camera-box.

A. The same that I would with this box, Exhibit D, Tompkins, except putting my plate-holder through sideways.

77. X Q. Can you not give a more full and distinct answer to my last question? If you can, please do so.

336. A. I don't see any question to answer. I should answer as I did to the last question. The principle would be the same, whether I put it through at the side or at the top.

78. X Q. Please refer back to the time when you used the Gibson box and took pictures with it and state the first thing you did when about to take a picture, using said box.

A. I used the same process that I would by other box, except passing the holder through sideways.

(Answer objected to as irresponsive.)

79. X Q. Please refer to my last question and answer it.

A. I have given a correct answer. I think I could not use the box in any other form except to focus my picture and place my plate through the side of the camera.

80. X Q. Was the Gibson camera-box, with its apparatus, in its form, construction, principle, mode of operating the same, and in the results produced, like Exhibit D, Tompkins, with the exception of having a hole through the sides, and having the plate-holder go into the side, instead of having a hole at the top to receive the plate-holder?

A. The advantage of the box was, I could take more than one impression on a plate in a different form. I could produce the same results, only more of them, in the centre of the lens, by placing a diaphragm in front of my focus-glass or my plate-holder.

81. X Q. Please describe exactly and distinctly the operations, step by step, by which you produced these results with a Gibson camera-box?

A. After drawing the focus on the sitter, I remove my focus-glass, put my plate-holder so as to bring the one-sixth plate half-way over the diaphragm, draw my slide part away, shove the plate-holder along again to its proper place, withdraw my slide to the end of the holder, and expose for the second impression; bringing my plate out over the mercury, I had two pictures on the same plate, side by side. This was one advantage of passing the plate-holder through the side of the camera.

82. X Q. To what place did you move from Fall River, and when?

337 A. I moved from Fall River to New Bedford in August, 1855, I think. I still continued my place at Fall River.

83. X Q. From the time you sold the Gibson camera to Hathaway till you moved to New Bedford what kind of camera-boxes did you use and from whom were they procured?

A. I used a half-sized box made by Mr. Roberts in Boston, and I bought it of Benjamin French. I also bought a box made by Mr.

Lewis of New York that had another slide movement through the side.

84. X Q. Was the Roberts box like Exhibit D, Tompkins?

A. It was made perfectly square; it was larger, of course, and was a half-plate box.

85. X Q. Was the plate-holder inserted through the top of the box or through the side?

A. Through the top; and made to carry three holders; and made to carry the plate lengthwise or sidewise.

86. X Q. When and from whom did you obtain the Lewis box just spoken of?

A. I got the box in 1849, of Mead Bros., New York.

87. X Q. How long did you use that box?

A. About a year and a half.

88. X Q. Have you any memorandum, receipt, or other papers or data, by which you determine the time when you procured the Lewis box?

A. I have none.

89. X Q. In taking pictures with the Gibson box, where was the ground-glass placed?

A. It was put into the side of the camera-box and placed in position in the centre of the box.

90. X Q. Was this the case also with the Lewis box?

A. It was not.

91. X Q. Describe the difference.

A. The Lewis box had a carriage, or shield, you may call it, which held the focus-glass; it was made to pass out this side—the right side—to receive the plate-holder. After focussing the sitter the carriage passed through the box with the holder by removing the slide
338 and taking an impression. | I would then place the slide in the
holder, remove the carriage back through the box, take out my holder, and place the holder ever the mercury-bath to develop the picture, which was done by heated mercury.

92. X Q. Was the ground glass attached to this carriage; if, so, to what part of it, and what portion of it did it occupy?

A. The ground glass was made and put into a frame and put into this carriage, to remain or to be removed, at the operator's option?

93. X Q. In what part of the carriage was it placed, and what portion did it occupy?

A. It remained or occupied the left-hand end; to be removed if required.

94. X Q. What became of the Lewis camera-box; when and where did you last see it?

A. I think I saw it in Staunton, Mass., the last time I saw it. A gentleman by the name of W. S. Gove bought it of me. The last I knew anything about Mr. Gove he went to Kentucky. I received a letter from him, but can't think of the name of the town now. I cannot tell the date I sold it to him.

95. X Q. When did you leave New Bedford, and to what place did you go?

A. I left New Bedford April 14, 1864, and went to Bristol, Vermont, and remained there one month, and then went to Rochester, New York, and remained there nearly five years, and then came to Boston, where I have been ever since. I shall have been here six years the 10th day of February.

95. X Q. Can you give the Christian name of Mr. Lewis referred to?

A. I think the name was J. & W. R. Lewis. I think their stamp was upon my box?

96. X Q. Was there not also on the same box a stamp showing that it was patented?

A. I never saw any.

97. X Q. Do you know, or have you heard, or did you in any
339 at that time understand that the Lewises or either of them had
obtained a patent on said box, or any part thereof, or on the apparatus connected therewith?

A. I never knew about it.

98. X Q. Of whose manufacture are the camera-boxes which you now have in use?

A. One was manufactured by the American Optician Company, New York; one by Mr. Roberts, of Boston; one by E. Gordon, of New York. I can't think of the name of the manufacturer of the last one; I bought it of Geo. S. Bryant.

99. X Q. Have you not stated that you had a license from a man on Washington street to use the Southworth patent, or to that effect?

A. I never bought any license or never asked for any license. I got a paper given me by Mr. Cahill stating that it was a license from Ormsbee, which he purchased for one room-right in Boston. Mr. Cahill gave it to me of his own accord, and told me to keep it till he called for it.

(Answer objected to as irresponsive.)

100. X Q. Please answer my last question.

A. I leave my answer as it stands.

(Complainants' counsel failing to obtain an answer will propound no further inquiries.)

Direct examination resumed:

Q. 61. Will the witness state if he is prepared and willing to answer further cross-interrogatories upon other matters connected with this case?

A. I am.

(The defendant here offers to give way to counsel for complainants to put further cross-interrogatories. Counsel for complainants declines to do so at the present time.)

Q. 62. In answer to X-question 91, in describing a box which had a carriage or shield to carry the focus-glass, which camera do you now say had this carriage, the Gibson or the Lewis box?

340 A. The Lewis box.

Q. 63. In answer to cross-interrogatories 81, where you speak of bringing the plate half way over the diaphragm, do you mean to be understood over the diaphragm or over the opening in the diaphragm?

(Objected to as leading and suggestive.)

A. I mean to be understood over the opening of the diaphragm.

Q. 64. In your cross-examination, where you state you have had no communication with Mr. Tompkins since the close of the examination yesterday, do you mean to be understood upon no subject whatever?

A. Nothing pertaining to this affair.

Q. 65. Referring to the cross-examination this morning, where you are asked if you have any means or memoranda of stating with exactness the time when Exhibit 46 was taken, will you now say if you have or have not thought of any such means or memoranda, and if you can now answer more definitely?

A. I have a family record in the Bible stating the time when we were married.

Q. 66. How does that record compare with the statement given this morning as to the time of your marriage?

A. The record is that I married in June, 1847; the picture was made the fall before.

(Complainants' counsel objects to the last part of the answer as irresponsive and improper in redirect.)

67. Q. Please state if the printed form of answer which you refer to in cross-interrogatory 2 was sent at your request, or if you had any knowledge of its existence prior to the time of its inception?

A. It was not sent at my request; I had no knowledge of its existence prior to its reception.

E. S. DUNSHEE.

Sworn to and subscribed before me the 4th day of September, A. D. 1874.

B. T. VETTERLEIN,
Spec. Examiner.

341 It is hereby stipulated by and between the counsel that the deposition of Silas Sellick, taken in the suit of Simon G. Wing, et als. against Joseph H. Tompkins, in the sixth circuit of this court for the western district of Michigan, may be read and used in evidence in this case, with like force and effect as if taken herein.

Circuit court of the United States, sixth judicial circuit, western district of Michigan.

SIMON WING, ET AL. COMPLAINANTS,
vs. } In equity.
JOSEPH H. TOMPKINS, DEFENDANT.

Be it remembered, that on the 10th, 11th, 12th, 15th, 18th and 30th days of December, 1873, at my office in the United States court building, in the city of San Francisco, personally appeared before me, L. S. B. Sawyer, a commissioner duly appointed by the circuit court of the United States for the sixth judicial circuit, in and for the western district of Michigan, SILAS SELLECK, a witness on behalf of the defendant in the above-entitled cause.

And the said witness, having been by me first cautioned and sworn to testify to the truth, the whole truth, and nothing but the truth in the cause aforesaid, did thereupon depose and say as follows; that is to say:

Q. 1. What is your name, age, place of residence, and occupation?

A. Silas Selleck; age now 45 years; residence, San Francisco; and occupation, photographic artist.

Q. 2. Do you know the parties to this suit or either, and which of them; if so, how long have you known them or either and which of them?

342 A. I do not know either of the parties to this suit.

Q. 3. Have you ever been engaged in the business of photographing? If yea, when and where did you first engage in that business; and how long, and where have you followed it?

A. My answer to that question would be, yes. I commenced to work for Phillip Haas, at the corner of Broadway and Reade streets, New York City, on the fourth day of November, A. D. 1845. I remained with him until February, 1847, or February 1848, I have forgotten which. I then went to work for M. B. Brady, at the corner of Broadway and Fulton streets, New York City. I remained with Mr. Brady, at that place and Washington, D. C., until May 19, 1852. I then came to California, and have resided here ever since.

Q. 4. During what portion of the time mentioned in your answer to the third interrogatory were you engaged in the photographic business as principal, and during what portion of said time as an employé of others, and where, when, and for whom have you been so employed?

A. I first commenced business for myself in December, 1853, in San Francisco, as principal; I operated for H. D. Bradley, in San Francisco, for about six months; I operated for Mr. Haas, in New York, from November 4th, 1845, until February of the year 1847 or 1848; I remained with Mr. Brady from that time until May 19th, A. D. 1852. During the times I worked for Mr. Haas and Mr. Brady, I was in the employment of those gentlemen. From the time I arrived in San Francisco, California, June 28th, 1852, until November 4th, 1852, I worked for George H. Johnson, in the photographing business in Sacramento, California. I worked for Beals in Sacramento—H. S. Beals—in the photographic business; it was about the first of June, 1854, I went to work for Mr. Beals; I operated for Mr. Beals for about four months. I worked for Mr. Bradley, San Francisco, at the photographic business, from December, 1853, to May, 1854.

Q. 5. Are you acquainted with any method of making more than one
photographic picture upon the same plate by bringing different
343 portions of that plate successively into the field of the lens, with-
out removing the plate-holder from the bore?

A. I know of two methods; one by a sliding plate-holder, and the other by sliding the lens.

Q. 6. If your answer to the last preceding interrogatory be yea, state when, where, and how you first became acquainted with such method, and whether the same was invented by you or taught to you; if taught to you, state by whom?

A. The sliding plate-holder was first taught to me by Philip Haas, in New York City; he taught me while I was in his employ. The sliding-lens box was first shown to me by E. J. Maybridge, in San Francisco, in 1866. The box was then an old one; he brought it from Paris, France, to this city, San Francisco; that box is now in this city.

Q. 7. Have you yourself ever made photographic pictures in the manner indicated in the fifth question?

A. Yes; I have made them by the two methods spoken of by me; one was by means of the sliding lens, and the other by means of the sliding plate-holder:

Q. 8. Can you produce and file with the commissioner a model or drawing of the plate-holder used by you, and so much of the camera-box and other apparatus as may be necessary to illustrate the process by which you made such pictures? If so, produce the same, causing the different parts to be lettered, and the whole to be marked Exhibit B, Tompkins; then proceed, first, to describe the construction of said plate-holder and apparatus; second, describe its method of operation fully and particularly?

A. I can produce the model. Exhibit C, Tompkins, is an exact facsimile of the Haas plate-holder which I saw in 1845. The plate-holder was constructed with the view of taking four impressions upon the plate without removing the plate-holder from the camera. The inner portion of the said plate-holder was allowed to move at right angles by means of a double lever, as shown in No. 1 of Exhibit C, Tompkins, which lever also acted as a spring to keep the plate and holder together, and in the focus of the camera, and was used in the following manner: After drawing the focus upon the ground glass, the 344 ground glass was removed from the camera, and the plate-holder placed in its stead. Then the slide marked No. 4, was drawn to admit the light through the front aperture of the plate-holder, which allowed the first impression on the quarter of the plate marked No. 5; then, by a movement of the inner portion of the plate-holder to the left, I secured an impression on the quarter of the plate marked No. 6; then, by an upward movement of the inner portion of the plate, I secured an impression on the quarter marked No. 7; then, by a movement of the same inner portion to the right, I secured an impression on the quarter marked 8. Each impression of the quarters of the plate was brought in the direct focus of the lens. During the time I operated for Mr. Brady, in New York City, I made a practice of taking all locket pictures by a cut-off in my camera-box, by which means I would place the camera upon its side, then shove my plate-holder far enough in the camera to expose the first half of the plate to the focus of the lens; then I would shove the plate-holder fully in the camera, and expose the second half of the plate to the focus of the lens, and securing two impressions upon the plate, without removing the plate or plate-holder from the camera box.

Q. 9. In what portion of the field of the lens were pictures or impressions made by the process or method which you have described in the answer to the last preceding interrogatory?

A. Each impression was made in the center of the field or focus of the lens.

Q. 10. State when and where you first made such pictures, whether few or many; whether they were made for sale or as mere experiments, and how long and during what years you continued to make such pictures?

A. I first made pictures with the Haas plate-holder in 1846; the plate-holder being a badly constructed one in its mechanical construction, I made but few pictures with it, and that plate-holder having been used by Mr. Haas at Washington, D. C., was considerably worn: I made those pictures both for sales and as experiments, as I was learning the art at that time; the method I adopted in Mr Brady's of 345 taking two impressions upon a plate, I used or practised very extensively, as Mr. Brady did a very large business at the time. I commenced taking pictures by the process described in the answer to question 8, in Mr. Haas' establishment in 1845, and continued making them there at different times until February, 1847 or 1848, I have forgotten which, when I went to Mr. Brady's; by the process I used at Mr. Brady's, of taking two impressions upon the plate without removing the plate and plate-holder from the camera, I practiced that process very extensively for taking all locket pictures from the time I went to Mr. Brady's until May 19th, A. D. 1852, for all locket pictures made for sale in his gallery. I now have in my possession one-half of a plate containing a picture of my wife; the other, of a plate containing a like picture, was destroyed by the fire of November, 1852, in Sacramento City, California. The full plate, when taken, contained two impressions upon the plate, made by sliding the plate-holder, so that I first exposed one-half of the plate to the focus of the lens; then, by sliding the plate-holder fully in the camera, I exposed the other half to the focus of the lens; the plate, when finished, contained two impressions of the same person, by means of sliding the plate-holder without removing the plate-holder from the camera. Said picture was taken on the 18th of May, 1852.

Q. 11. How do you fix the date when you first made such pictures, and how do you determine that you made such pictures during the years that you have mentioned?

A. From a retentive memory.

Q. 12. Do you know of other persons making photographic pictures, or impressions two or more on one plate, by bringing different portions of the plate successively into the field of the lens, without removing the plate-holder from the camera-box? If yea, name such persons, and state where and when you knew them to make such pictures; whether they made few or many; and also state, if you know, whether they made them by the process or method that you made use of, and with like apparatus, or by some different process and with different apparatus. State fully and particularly.

346 A. I do not know whether the other operator at Brady's, while I was there, did or did not make pictures that way—that is, by bringing different portions of the plate successively into the field of the lens, without removing the plate-holder from the camera-box; but I am inclined to think that Mr. Andrew Paradise, now with Whitney, in South Warwick, Connecticut, made locket pictures in that way at Mr. Brady's gallery, as he was employed there the same time I was, and frequently was in my room. If Mr. Paradise made locket pictures two on a plate, he must have made them with similar apparatus to mine, as our mode of operation was similar.

Q. 13. Do you know, or can you set forth, any other matter or thing which may be a benefit or advantage to the parties at issue in this cause, or either of them, or that may be material to the subject of your examination, or the matters in question in this cause? If yea, set forth the same fully and at large in your answer.

A. I recently learned that at the time I was with Mr. Brady at New York that Marcus Ormsbee, complainant, is the same Mr. Ormsbee that was in the daguerreotype business in the Bowery, New York City, and as that time the members of the profession were but few, they were mostly on terms of acquaintance, and, as I believe, the principle of the sliding plate-holder was generally known among the profession; and it is evident that it was there where Mr. Ormsbee first got his idea of the sliding plate-holder; and when the photographic card was introduced he availed himself of the benefits of that plate-holder to obtain letters patent. I believe the two modes of using the sliding plate-holder first originated with Mr. Philip Haas and myself, previous to the year 1852; I will also state that Mr. Enos Foster, who I now believe is in New York, and also Mr. John Adams, who was at Lima, South America, when I last heard of him, three years ago: both of these men were employed as plate-cleaners in Philip Haas' gallery, New York, during a good portion of the time while I was with Mr. Haas, and both knew of the sliding plate-holder spoken of by me in the evidence.

Cross-examination:

347 Cross-interrogatory No. 1. If, in reply to question 5, you have answered that you are acquainted with any method of making more than one photographic picture in manner indicated in that question, state by whom you first saw photographic pictures so made, and where that person now lives and does business; state also where the

camera-box, with its plate-holder with which said pictures were made, now is; where did you last see the same, and in whose possession? Produce the same, if you can, or such parts thereof, if you can, and have the same marked Exhibit 1. By whom were the same made, if you know, and where does the maker (if living) reside and transact business? Of whom were the same purchased, if you know, and what is the residence and place of business of the seller or sellers?

A. I first saw them made by Philip Haas, in New York, who is now dead. I last saw the camera-box with which said pictures were made either in February, 1847, or February, 1848. I cannot produce either the camera-box or plate-holder. Mr. Haas informed me that they were made in Washington City in 1842. I cannot say of whom the same were purchased or who were the sellers.

Q. 2. If, in answer to Q. 6, you say you have been taught by any person as there inquired, give the residence and place of business of such person?

A. It was by Philip Haas, corner of Broadway and Reade streets, New York City, that is, I was taught the sliding plate-holder. Mr. Haas is now dead. E. J. Mybridge also taught me the sliding lens-box process, and his residence is at San Francisco, California.

Q. 3. If, in answer to Q. 7, you say you have ever made such pictures, describe particularly the place where you first made such pictures. Produce the camera-box, with its plate-holder and apparatus, with which you made the same, or such parts thereof as you can, having the same marked Exhibit 2. If you do not produce the same, state when you last saw them. Give the name and present place of residence and of business of the maker thereof; also the name and present residence and place of business of the seller thereof; also give the name or names and present residence of any persons whose pictures
348 were so taken, and the time when taken, if you have any original receipt or other paper of such date referring to such taking, and which you will annex?

A. I first made such pictures in Haas' gallery, in New York, in 1846. I cannot produce the same camera-box, with its plate-holder and apparatus with which I made those pictures, but Exhibit C, Tompkins, is an exact fac-simile of the same. I saw that camera-box, with its plate-holder and apparatus, last at Philip Haas' gallery, corner of Broadway and Reade street, New York city. I do not know the name of the maker of the camera-box which I saw at Philip Haas', and cannot therefore give his name.* I cannot give the name or present residence or place of business of the seller thereof. I can only give the name of my wife whose picture was taken by the process mentioned in the answer to the seventh direct interrogatory.

Q. 4. If, in answer to ques. 8, you file any model or drawing, state when, where, by whom, and at whose request such model or drawing was made.

A. Exhibit C, Tompkins, was finished on the 10th of this month. It was made here, in San Francisco, by James Scouler, under my directions. That model was made at the request of Joseph H. Tompkins.

Q. 5. If, in answer to ques. 10, you say you made such pictures, state where you obtained the apparatus with which you made them. If you know the maker or seller thereof give their names, present places of business, and residence.

A. I obtained the apparatus with which I made such pictures in the gallery of Phillip Haas, corner of Broadway and Reade streets, New

York city; I do not know the name or names of either the maker or seller thereof; I found it in Haas' gallery when I went there to work.

Q. 4. If, in answer to question 11, you refer to any papers or documents, state whether they were made at the times they purport to have been, and annex or file the same properly marked or identified.

A. In answer to direct interrogatory 11, I did not refer to any papers or documents.

Q. 7 (de bene). If you answer the first part of question 12 in the
affirmative, give the present place of business and residence of
349 every person whose name you shall have given in your answer to
question 12, and give the names and present places of business and residences of the makers, and also of the sellers of the apparatus by which such pictures or impressions were made?

A. Mr. Andrew Paradise, now with Whitney & Co., at South Warwick, Connecticut, is the only one I can mention; if Mr. Paradise did make pictures in that way, then he made them with an ordinary camera-box, which was made by Lewis, of Chatham street, New York.

Q. 8. If you have stated in this deposition that you have made any pictures "on the same plate, by bringing different portions of that plate successively into the field of the lens, without removing the plate-holder from the box," or that you have seen such made, state upon what material each and all of said pictures were made; also, whether they were photographs, ambrotypes, or ferreotypes?

A. Those which I made in that manner were daguerreotypes, made upon a silver plate.

Q. 9. Have the interrogatories or cross-interrogatories which are annexed to this commission, or any of them, or the substance of any of them, been made known to you, excepting by the commissioner taking your deposition? If so, when, and by whom? And before giving the answer to any interrogatory or cross-interrogatory, have any of the subsequent interrogatories or cross-interrogatories been made known to you?

A. The direct interrogatories, with the exception of question 13, have been made known to me otherwise than by the commissioner. I obtained these interrogatories from Mr. Tompkins, defendant, some time during the last of October of this year. With the exception of the direct interrogatories none of the subsequent interrogatories were made known to me before giving the answer to any interrogatory or cross-interrogatory. I never saw Mr. Tompkins during my life, and I received the interrogatories mentioned through a correspondence with him.

Q. 10. Have you received any communication relating to the
350 testimony to be given by you, or to the interrogatories to be
propounded to you? If so, when, and from whom, and annex the same, or a true copy thereof?

A. No communication except a correspondence in reference to the direct interrogatories. Well, it was from Mr. Tompkins; I received it on December 10th, 1873; I have not that letter of Mr. Tompkins now in my possession.

11. Q. Has any person but the commissioner taking this deposition been present during the time of its taking or during any part thereof? If so, who?

A. No one but the commissioner and his clerk, J. F. O'Beirne.

Q. 12. Have you furnished any pecuniary aid, or agreed or promised to furnish such aid, for the defence of this or of any action or bill in equity involving a validity of a patent granted to A. S. Southworth, for a "new and useful plate-holder for cameras"?

A. I have not.

Q. 13. Before the giving of this deposition had there been exhibited to you the testimony, or any part thereof, which had been taken in any other case, wherein these complainants, or any of them, were parties? If so, when, by whom, and what?

A. No testimony whatever.

Q. 14. Is any suit or action pending against you in favor of these complainants, or any of them, charging you with having infringed any patent?

Ans. No, sir.

SILAS SELLECK.

Subscribed, and sworn to, before me this day of A. D. 1873.

Witness here states that the date, December, 1853, in answer to the 4th direct interrogatory, should be December, 1852, that he commenced business as principal.

SILAS SELLECK.

Examination taken, reduced to writing by J. F. O'Beirne, esq., in my presence and under my direction, and sworn to the 10th, 11th, 12th, 15th, 18th, and 30th days of December, A. D. 1873, before me.

L. S. B. SAWYER, *Com., etc.*

Adjourned to September 29, 1874, 12 m., by consent.

351 NEW YORK, *Nov.* 10, 1874—11 a. m.

Met pursuant to notice.

Present, Mr. Abbott, of counsel, with the complainants, and Mr. Blake, of counsel, with the defendants.

ARTHUR COBDEN, a witness produced on the part of the defendants, having been first duly sworn, in answer to interrogatories propounded by Mr. BLAKE, says:

1. Q. What is your name, age, residence, and occupation?

A. Arthur Cobden; I am 42 years of age; I reside in Troy, New York; I am a photographer.

2. Q. How long have you been a photographer, and where have you carried on that business?

A. I have been a photographer 28 or 29 years—somewhere around there, I can't recollect exactly; I have carried on that business in London, England; Philadelphia; New York; Louisville, Kentucky; New York, again. I was also about two weeks in Baltimore, and then in Troy.

3. Q. When and with whom did you carry on this business in London?

A. J. A. Mayall, when I was about from 13 to 20 years old, as near as I can figure.

4. Q. During the time that you were with Mayall, did you see an apparatus in use by which more than one picture could be taken without withdrawing the plate-holder from the frame? and, if yea, please describe it.

A. Yes, sir; a small tube with frontal-box, ground glass close up to the tube, with a place for the ground glass to slide from right to left. The holder was then placed in the place of the ground glass, and one sitting made; it was then moved, and the second sitting made.

5. Q. By sitting do you mean picture?

A. Yes, sir.

6. Q. After taking the first picture, and before taking the second, did you move the ground glass over the mouth of the tube?

A. Only at the first sitting to get the general focus.

352 7. Q. Did the plate-holder move vertically or horizontally?

A. Horizontally.

8. Q. How extensively was this apparatus used in Mayall's rooms?

A. Only for small lockets and rings.

9. Q. Do you know where this apparatus was manufactured; and if yea, where?

A. I am not positive. I think in Paris.

10. Q. Was it in use when you first went to Mayall's rooms; and if not, how long after?

A. It was not. It was about four or five years after. I can't recollect distinctly.

11. Q. Did you afterwards make an apparatus like this; and if yea, when and where?

(Objected to as leading.)

A. I tried to make one; but I don't recollect using it. I guess it was in Philadelphia, I could not tell. It was right after I came over here. It was in the first or second year I was in America.

(Defendant's counsel seasonably objected to all the foregoing questions, touching transactions in London, as irrelevant and inadmissible under the answer, and his cross-interrogatories relating thereto are propounded de bene.

And being cross-examined by MR. ABBOTT, says:

12. X Q. When did you come to America, and to what place?

A. I entered New York and went directly to Philadelphia; it was in September, 1851 or 1852, I can't say which.

13. X Q. Are you certain it was in 1851 or 1852?

A. Yes, sir.

14. X Q. What means have you of determining the time?

A. By figuring up the different places I have been in.

353 15. X Q. State those places, giving the time you remained in each?

A. With M. A. Root, one year in Philadelphia; M. B. Brady, one year in New York; I. V. Webster, one year in Kentucky; M. B. Brady, I think, five years again, and in Troy between ten and eleven.

16. X Q. In what year did you commence business in Troy?

A. I think it was close by 1863.

17. X Q. Have you any means of stating with accuracy the time?

A. No, sir; I cannot place it.

18. X Q. Can you state with absolute certainty the time within two years, when you commenced business in Troy?

A. I think if you say 1862 or 1863 it would be within the time.

19. X Q. Did you remain with Mayall till the time when you left for America?

A. Except two weeks.

20. X Q. How long before you left Mayall's was it was when you first saw pictures taken in the manner you have described?

A. I should think three or four years.

21. X Q. Can you safely swear that it was as long as three years before you left Mayall that you saw pictures taken in that manner?

A. Yes, sir; to the best of my knowledge and belief.

22. X Q. Can you safely swear that it was as long as four years before you left Mayall that you saw pictures taken in that manner?

A. No, sir; but I think it was.

And being further examined by Mr. BLAKE, says:

23. Re-D. Q. Do I rightly understand you to say that you began with Mayall when you were thirteen years of age?

(Objected to as leading and improper in redirect.)

A. About that.

354 24. Re-D. Q. How many years did you remain with him?

(Objected to as improper on redirect.)

A. About seven, as near as I can figure.

25. Re-D. Q. You are now 42; in what year, then, were you thirteen years of age?

(Objected to as before.)

A. I should say that it was in the year 1845.

26. Re-D. Q. In your answer to the 15th question, you say that you were with Mr. Root one year, in Philadelphia; with Mr. Brady one year, in New York; with Mr. Webster one year, in Kentucky, and with Mr. Brady five years again; and in Troy, between ten and eleven years. This makes only 19 years. You have stated that you came here in 1851 or 1852; you have accounted for 19 only of these 22 or 23 years. Can you correct your statement in the answer to the 15th X Q., so as to cover those years?

(Same objection as before.)

A. I am giving these dates as nearly as I can recollect. I may have been at Root's perhaps 18 months, but I don't recollect exactly the date; and the same way with Mr. Brady, the last time. I know I was there a year the first time.

27. Re-D. Q. Were you in Troy at the time of the great fire?

A. No, sir.

28. Re-D. Q. Have you any other way of fixing the date you came to this country than by counting back these years, or did anything occur before you came to this country?

(Objected to as above.)

A. No, sir.

ARTHUR COBDEN.

Subscribed and sworn to, the tenth day of November, 1874.

E. G. THOMPSON, *Examiner.*

355 NOVEMBER 10TH, 1874.

GEORGE MCKOWN, a witness, produced on the part of the defendants, being first duly sworn, in answer to interrogatories propounded by Mr. BLAKE, says:

1. Q. What is your name, age, residence and occupation?

A. George McKown; residence, Hudson, New York; a photographer, and have been for 23 or 24 years.

2. Q. Did you ever have and use a camera-box and plate-holder so constructed as to allow more than one picture to be taken, without withdrawing the plate-holder from the box; and if yea, when first, and where, and please describe the apparatus?

A. I have. The apparatus was a bellows box, with a plate-holder containing two slides, one with an aperture about half the size of the plate upon which the picture was taken. The plate-holder was then inserted and one end exposed by drawing both slides half way. After the exposure both slides were shoved back into their place. The slide then drawn without an aperture exposing the other end of the plate, making the two pictures. I had this at Philadelphia, in the years 1852–'3, I think it was.

3. Q. How did the box differ from ordinary camera-boxes?

A. The box itself differed in regard to the plate-holder, the plate-holder being larger than *the* usual.

4. Q. Where was the aperture in the box to receive the plate-holder?

A. The aperture was made to correspond with the size of the picture, at the center of the box.

5. Q. Was the aperture at the top of the box or at the side of the box; I mean the opening into which the plate-holder passed?

A. It was at the side of the box.

6. Q. Please describe the plate-holder; how many slides had it?

A. It had two slides.

7. Q. In taking the first picture, how far did you insert the plate-holder?

356 A. I inserted the plate-holder far enough to receive the picture on the end of the plate.

8. Q. After the first picture had been exposed long enough, what did you next do?

A. I shoved in the two slides.

9. Q. What did you do next, after you had taken the first picture and shoved in the two slides?

A. I drew the slide that had no aperture, leaving the one in that had an aperture, previously having inserted the plate-holder far enough to receive the impression on the unexposed part of the plate.

10. Q. For this purpose, how far did you push the plate-holder in?

A. About 2¼ or 2½ inches. I do not exactly recollect.

11. Q. After you had pushed it so far in, did any part of the plate remain outside of the box?

A. I rather think there did. I am not positive. I, however, know that the exposed plate was not affected by it.

12. Q. How many pictures was this plate-holder adapted to take successively, without withdrawing it from the box?

A. Two.

13. Q. How long did you use this apparatus?

A. I used it from five to eight years. I used it for at least eight years—at first for three years, and then, after an interval, I used it again.

14. Q. Please explain a little more clearly the two slides which you say were on the plate-holder; which was the inside slide, the one with the aperture or the other one?

A. I think I used the one with the aperture on the inside. I could not say as to that, both ways producing the same result, exposing the unexposed part of the plate.

15. Q. Did you withdraw both slides through the same side of the box?

A. I did, sir.

357 16. Q. The hole through which the light came was in the middle of the box, was it; or if not there, where was it?

(Objected to as leading.)

A. It was made to correspond with the image on the ground-glass of the camera.

17. Q. In what part of the face of the box turned toward the object to be taken, was the opening where the lens was placed?

A. I can't get the meaning of your question.

(Question withdrawn.)

(Cross-examination waived.)

GEORGE McKOWN.

Subscribed and sworn to before me this 10th day of Nov., A. D. 1874.
E. G. THOMPSON, *Examiner.*

SETH E. PARSONS, a witness produced on the part of the defendants, being first duly sworn, in answer to interrogatories propounded by Mr. BLAKE, says:

1. Q. What is your name, age, residence, and occupation?

A. Seth E. Parsons; I am forty-eight years of age; I reside at Albany, New York; I am a clerk in a gas-meter establishment.

2. Q. Were you ever engaged in the business of making photographic pictures; and, if yea, when first?

A. I was engaged in the picture and stock business, as we called it—selling the pictures and the material for making pictures; we commenced November 1st, 1850; I was employed by Noel E. Sisson, of Albany, and continued in his employ for ten years, when, in company with James B. Green, we bought out the business, and continued it under the firm name of Green & Parsons.

358 3. Q. Did you ever see a camera-box having a sliding plate-holder, and so constructed as to permit more than one picture to be taken without withdrawing the plate-holder from the box, and if yea, when first?

A. I have seen such a box; I ordered one myself; that is, ordered a box to do that, I think in 1851; I think it was in the forepart of 1851, as near as I can recollect now.

4. Q. Please describe that box.

A. It was done by placing a piece of thin board in the opposite side of the box from where the plate-holder entered the box, covering the half of the box opposite where the plate-holder entered it; then the plate-holder was marked so as to enter the box one-half way, or so that it would meet the piece of thin board described; the slide of the plate-holder was withdrawn, exposing one-half of the plate, and one picture was made; the plate-holder was then pushed entirely in the box, as far as it would go, the slide wholly withdrawn, exposing the other half of the plate, thereby making two pictures on one plate, without withdrawing the plate-holder.

5. Q. Can you name any other persons who saw this instrument?

A. Mr. Sisson, my employer, Mr. Dennison, and an employé, and I presume others, whom I cannot now specify.

6. Q. Was this camera, thus constructed, operated by any one in taking pictures, and if yea, by whom?

A. I made the alterations for use in our own establishment, Mr. Dennison, already spoken of, being the operator, as we called the man who had charge of the picture department.

7. Q. Prior to the work done by you on this camera, had you ever heard of cameras so constructed described, and if yea, by whom?

(Objected to as asking for hearsay.)

A. I had, by Mr. James Irving, and by others whom I cannot
359 name. It was from the description of Mr. Irving and these others
that I made the alterations I have spoken of.

(Last part of the answer objected to as not responsive and inadmissible.)

8. Q. Have you seen other cameras of the same construction; and, if yea, when and where?

A. I cannot say positively whether I have seen them made exactly like that or not.

9. Q. While you were with Mr. Sisson, was this camera used to take pictures for customers?

A. It was.

10. Q. Do you know what has become of it now?

A. I do not. The establishment has changed hands a number of times since then, and it probably cannot be traced.

11. Q. How long is it since you left the business?

A. About three years. I was compelled to leave it on account of illness.

Being cross-examined by Mr. ABBOTT, says:

12. X Q. Have you any means, and, if so, what, of fixing with certainty the time when you commenced business, as before stated?

A. I have several reasons for expressing myself so positively. First, being a machinist by trade, I changed my business and went into this photographic business. By my memory, being a very important step, changing from one business to another, would naturally impress it on one's mind. I had been married but a short time, and had just commenced keeping house in 1850, and my oldest child was born in that year, and also from books and papers in my possession.

13. X Q. What books and papers?

A. Books that came into my hands from succeeding to the business; the account books relating to the business of Sisson.

14. X Q. Where are those books?

A. I have some of them in my possession now at my house. I think—I am quite sure—I have the old ledger with some entries in my handwriting.

360 15. X Q. Are you certain there are any entries in that ledger in your handwriting made as early as 1851?

A. I cannot say positively, as I have not the book before me now. I presume that there are such entries.

16. X Q. Have you any means of determining with certainty the time when you altered the camera-box as before stated? And, if so, state such means.

A. Mr. Irving, who made the suggestions in regard to the box, was in Mr. Sisson's employ a short time, and it was while he was there that I got my ideas of how to make this alteration, and it was previous to 1851 that he was in Mr. Sisson's employ. He might have remained a short time after the 1st January, 1851, but it could not have been a great while, for it was only a short time from when he commenced that he went away.

17. X Q. Please give Mr. Irving's full name, and state, if you know, where he now is.

A. James Irving. I don't know where he now is.

18. X Q. Where was he when you last knew or heard of him?

A. Troy, N. Y.

19. X Q. When was he last in Troy?

A. I cannot remember; I cannot tell anything about when I last saw him.

20. X Q. Please give the full name of the Mr. Dennison that you have spoken of and his place of business.

A. Daniel Dennison, Albany, N. Y.

21. X Q. Please give the full name of the Mr. Sisson you have spoken of, and his present place of residence.

A. Noel E. Sisson. His residence is Albany, but he is now spending the winter at Jacksonville, Fla., or somewhere about there.

22. X Q. Can you state with accuracy the time when you commenced business in company with James B. Green?

A. I think it was the 6th day of March, 1860. I could tell by looking at my books.

23. X Q. Are you certain as to the time?

A. I say that I think it was the 6th day of March. I know it was in 1860, and I am pretty sure that that was the day.

361 24. X Q. What was your business, what your duties, when in the employ of Mr. Sisson?

A. Putting up orders for material, fitting up apparatus, and having a general supervision of the business in his absence. Part of the time I was the only person in charge.

25. X Q. Can you produce any card or plate having two pictures upon it, or any negative having two pictures upon it, which was made using the altered camera you have described?

A. I cannot.

26. X Q. Was the plate-holder, as used in said altered camera-box, inserted at the top or at the side of said box?

A. That depends upon which you call the top or side of the box when used for making pictures. In making the two pictures we turn the camera-box on its side, and then, of course, the plate-holder had a lateral motion instead of an upright.

27. X Q. Can you produce any picture which was made by the use of that altered camera-box prior to 1858, and state when such picture was in fact made?

A. I have no pictures of any kind made with that box, and have no knowledge of where any are to be found.

28. X Q. When and where did you last see that box?

A. I cannot tell, for I made very few pictures myself, and consequently had very little connection with the picture part of the establishment; when they were in a hurry I sometimes helped them, but Mr. Dennison generally had charge as long as he worked there.

SETH E. PARSONS.

Subscribed and sworn to the 10th day of November, 1874.

E. G. THOMPSON, *Examiner.*

362 CHRISTOPHER C. SCHOONMAKER, a witness produced on the part of the defendants, being first duly sworn, in answer to interrogatories propounded by Mr. BLAKE says:

1. Q. What is your name, age, residence, and occupation?

A. My name is Christopher Schoonmaker; my age is 43; my residence is Melrose, near Troy, New York; my occupation is photographer and farmer.

2. Q. Do you know Samuel J. Thompson; and how long have you known him?

A. Yes; since 1847.

3. Q. Did you ever see him use a camera with a plate-holder so constructed as to permit more than one picture to be taken without withdrawing the plate-holder from the box; and, if yea, when first and where? And please describe the apparatus that he used?

A. Yes; in the city of Albany, in the winter of 1848 and 1849. The camera-box was screened so that half of the light or field of the lens was shut off entirely from the action of the rays through the lens. The plate-holder was shoved in half way, the slide before the plate withdrawn half way; the picture was then made on that exposed half of the plate, and the plate-holder was shoved entirely in the box, the screen or slide was pulled entirely out, and another picture taken on the other half of the plate.

4. Q. Prior to that time, had he ever described such a camera to you; and, if yea, when first?

(Question objected to, as asking for hearsay.)

A. Yes; he showed me how to use it in the same year.

5. Q. What was your business at this time, and where did you carry it on?

A. Making photographic pictures, in Albany County, at a place called Potter's Hollow.

6. Q. Did you afterwards purchase a business in Albany; and, if yea, whose, and when?

A. Yes; Messrs. Meade & Brothers, in the spring of 1850.

363 7. Q. Did you find among the stock of Messrs. Meade & Co., when you purchased it, a camera-box or boxes capable of taking more than one picture without removing the plate-holder? And, if yea, please describe it.

(Question objected to as inadmissible.)

A. I found an attachment to a camera-box, with a plate-holder making five pictures on one plate, without removing the plate-holder from the frame or box. The frame or attachment to the box was fixed so as to go on the rear of any ordinary camera-box with an aperture in the center. The plate-holder was held to this frame by a spring, and moved to each corner, making four pictures on each corner of the plate, and also moved to the center, making one picture in the center.

8. Q. Please describe how the spring held the plate-holder in its place?

A. The spring had a small block of wood attached to its end, the plate-holder slid or moved to its different places under this block of wood.

9. Q. Please compare the apparatus you have just described with Defendant's Exhibit 8, stating wherein they are alike, and wherein different?

A. The motions for the four pictures in the four corners are the same. There was a spring, instead of an elbow, as is in Exhibit No. 8, which held the plate-holder against the frame or box. I might add that the spring was whole, instead of having a broken joint.

10. Q. Please show on this exhibit where the block was, against which the spring bore?

A. The block was situated similar to this button on Exhibit 8, and bore on the back of the plate-holder.

11. Q. Prior to your purchase of the Meade business, had any one in that business explained to you the apparatus you have just described?

(Question objected to as incompetent and hearsay.)

364 A. Messrs. Meade Brothers showed me some pictures made five on a plate, and said they were made by a camera that made the pictures without removing the plate-holder from the box. I think that was as near as they described the plate-holder.

12. Q. Did you use the apparatus you purchased from Meade in taking pictures for your customers; and, if yea, for how long?

A. Yes; for, I should think, about two years.

13. Q. What became of this apparatus, and where is it now?

A. I left it in the gallery that I purchased from Messrs. Meade when I sold out, and do not know where it is now.

Adjourned to Nov. 11, '74, 10 a. m.

NEW YORK, *Nov.* 11, '74—10 a. m.

Met pursuant to adjournment.

Present, counsel, as before.

And the witness, Schoonmaker, being cross-examined by Mr. ABBOTT, says:

14. X Q. Have you had litigation with the plaintiff, Simon Wing, in relation to the patent involved in this case, and are you the same person who was defendant in the case tried in the circuit court of the United States for the northern district of New York, and taken by appeal to the Supreme Court of the United States?

A. Yes.

15. X Q. When and where did you last see Samuel J. Thompson, named in your second answer?

A. I should think probably a year ago, in Albany.

16 X Q. What means, if any, have you of determining the time when you say you first saw him use a camera with a plate-holder so constructed as to permit more than one picture to be taken without withdrawing it from the box?

A. Some five or six years ago, when I was a witness in the case referred to of Wing vs. Schoonmaker, I hunted up an old pocket diary, wherein I had a memorandum of my travels around the country, the number of pictures taken, and the amounts received and the 365 amounts paid out. I found then, by that memorandum, that I was at Potter's Hollow, a little village in Albany County, in the winter of 1848 and 1849; and further, I recollect visiting Mr. Thompson from that place, and asking him for information in reference to the working of chemicals, as I had been bothered with my chemicals working badly.

17. X Q. Where is that pocket diary; will you produce it? Is any allusion made to it in your testimony in that case?

A. I don't exactly know where it is now; I might find it if I were at home, possibly. There was allusion made to it.

18. X Q. How long did you remain at Potter's Hollow? When did you leave that place, and to what place did you then go?

A. I remained there, if I recollect right, about six or eight weeks; I went off into Otsego County.

19. X Q. Have you any means, and, if so, what, of determining the time when you bought out Meade & Brothers?

A. When looking at memoranda of dates in the former trial I examined Mr. Sisson's account books, who bought out the stock part of Messrs. Meade Brothers; I found, by fixing the date by those books, that it was in 1850.

20. X Q. Please give the full name of each member of the firm of Meade & Brothers; and, if either of them is living, state where, according to your best knowledge or information?

A. Charles and Henry; Henry, I know, is dead; that is, I saw a notice of his funeral, and I have understood that Charles was dead a number of years ago, and have never heard or seen anything of him since.

21. X Q. When and to whom did you sell the gallery that you purchased from Messrs. Meade & Brothers?

A. In the winter of 1856, to Messrs. Wood Brothers.

22. X Q. Please give the full name of each member of the firm of Wood Brothers, and the present place of their residence, if living?

366 A. One is William and the other, I think, is John; I am not certain; they live in the city of Albany, or somewhere in the suburbs.

23. X Q. When and where did you last see the attachment to a camera-box with a plate-holder making five pictures on one plate, spoken of by you in your direct examination?

A. I could not say definitely when, but as near as I could get at it, should place it in 1852, or some time in that year, and in the gallery formerly occupied by Meade Brothers.

24. X Q. Can you give the name of any employé of Meade Brothers who used said attachment, or was present when it was used in their gallery?

A. Not being one of the employés of Meade, I could not tell who used or did not use it.

25. X Q. Can you give the name and place of residence of any person who used that attachment while you owned it?

A. I don't know that any person used it but myself.

26. X Q. Did you not have persons in your employ in your gallery between 1850 and 1856?

A. Very few.

27. X Q. Please give the name and place of residence of such persons?

A. I had a young man with me by the name of Royal Rose. The last time I heard of him he was living at Elizabeth, N. J. Another young man by the name of Charles Lamb. He lived in Albany; I have not seen anything of him for a dozen years. I have had several ladies employed in the gallery, but not more than one at a time; and some other young men whose names I cannot now recollect.

28. X Q. Can you and will you produce any card, plate, or negative having on it two or more pictures made by the use of that attachment while you owned it?

A. I cannot.

29. X Q. Can you and will you produce any picture made by the use of that attachment while you owned it?

A. I cannot.

367 30 X Q. Can you give the name and place of residence of any person whose picture was taken by the use of that attachment?

A. I cannot.

And being further examined by Mr. BLAKE, says:

31. Re-D. Q. You testified as a witness in the suit against you, named in your cross-examination, did you not?

A. Yes, sir.

32. Re-D. Q. Did you in that testimony fix the dates when you saw Thompson use the camera-box, and when you bought out Meade Brothers?

(Objected to as incompetent and inadmissible.)

A. I did.

33. Re-D. Q. Do you remember what dates you fixed in that testimony for these two events? And if yea, state what they were.

(Same objection.)

A. The first was in the winter of 1848-'49; the last was in the fall of 1850.

34. Re-D. Q. What have become of the pictures, negatives, etc., which you had in Meade Bros.' establishment in 1854-'5?

A. The pictures that were made specimens were left there in the gallery. There were very few negatives made at that time. If any were made, they were left there.

C. C. SCHOONMAKER.

Subscribed and sworn to the 11th day of November, 1874.

E. G. THOMPSON, *Examiner.*

E. & H. T. ANTHONY & CO.,
PHOTOGRAPHIC MATERIALS, 591 BROADWAY, N. Y.
New York, Nov. 11, 1874.

MR. BLAKE:

368 DEAR SIR: Since my arrival here at Mr. Anthony's, I thought that the correction, as regards the date of my purchase of Messrs. Mead Brothers, which I inadvertently stated in my communication yesterday was in the spring of 1852, instead of the fall of 1850, which I find to be correct on examining memoranda of dates, etc., which I requested the commissioner to alter before I commenced to give my cross-examination. The commissioner said he would do so before the cross-examination was through. This was spoken before Mr. Wing's attorney, and was so understood. Please have the commissioner alter, if it was not done. It slipped my mind afterwards till now.

Yours, C. C. SCHOONMAKER.

WILLIAM D. HICKS, being produced as a witness on the part of the defendants, and being first duly sworn, in answer to interrogatories propounded by MR. BLAKE says:

1. Q. What is your name, age, residence, and occupation?

A. William C. Hicks; I am 45 years of age; I reside at Summit, N. J., my place of business being in New York City; and I am by profession a civil and mechanical engineer. I am occupied, principally in examining and comparing machines and inventions, and in acting as expert in cases before the United States courts and in State courts; I also occasionally solicit patents.

2. Q. Have you read the reissued letters patent of Albert S. Southworth, dated September 25th, 1860, and do you understand the invention therein described and claimed?

A. I have, and I think I do.

3. Q. Please describe the mode of operation of the devices therein named in the combination set forth in the patent?

A. In taking daguerreotypes or other pictures called photographs, the plate-holder described in this patent is placed in a frame larger than the plate-holder, so that the plate-holder may have two movements at right angles to each other. If one is vertical the other movement
369 will be horizontal. The frame of the plate-holder is supplied with flanged edges, which would limit the movement of the plate-holder lying within those flanges, and moved in either of the directions to which I have previously referred; attached to this frame, for holding, containing, and guiding the plate-holder, is a swinging back-piece, which is

hinged to one side of the frame in such manner, that when it is closed against the frame, it holds the plate-holder in place facewise; this back plate is cut out centrally in the form of a square, and a small plate is hinged to the lower side of the said square, opening in such a manner that it swings in a backward and downward direction, and so that when it is closed or standing in a vertical position it closes this square hole, all but the upper portion, which is left in the form of a parallelogram, the longest side of which is horizontal; through this opening, a block attached to the plate-holder, projects, and when slid into either extreme position, either to the right or left, fills up about one-half of said opening; this block, which projects from the plate-holder, rests upon the upper side of this small door or hinge-plate L, preventing the plate-holder, and with it the plate, from falling by the action of gravity; in the front of the frame, and centrally, there is a hole to which the lens is supposed to be connected, or with which, centrally, it is supposed to be located; when a plate is put in the plate-holder, and the plate-holder is put in the frame, a slide covers the central opening in the frame, so that the light may not strike the plate until the operator is ready to take the picture; when the operator locates the plate-holder in the upper left-hand corner of the frame, the plate is so positioned in the plate-holder that its lower right-hand corner is exposed, when the slide is withdrawn, to the action of the lens, and a picture is taken; the picture having been taken, the operator moves the plate-holder towards the right, and into the upper right-hand corner of the frame, exposing to the action of the lens the lower left-hand corner of the plate until a second picture is taken; the small door or hinged-plate L is now moved backwards and downwards, and the plate-holder falls into the lower right-hand corner of the frame, and a picture is taken upon the upper left-hand
370 corner of the plate; the operator now moves the plate-holder to the left until it stands in the lower left-hand corner of the frame, and a picture is taken upon the upper right-hand corner of the plate. This operation is gone through with for the purpose of multiplying pictures upon a single plate, or increasing the number taken at one introduction of the plate-holder into the frame. This is substantially what I understand to be the mode of operation of the machine described in the specification and drawings of the letters patent referred to in the question. I will add, that I suppose the operator to be standing at the back of the frame.

4. Q. Do you find upon the block L any means for guiding the plate-holder in its descent? and, if you do, state what the operator would have to do, to avail himself of such means.

A. I do find on said block or hinge-plate L a portion cut away, leaving an edge standing vertically, about the width of the block, that projects through the rectangular opening of the hinge-plate. The operator in order to avail himself of this guide, must open the hinge-plate L to correspond with the speed that the block of the plate-holder falls by gravity vertically, or he must use both hands to keep the two parts in contact, as the block is lowered to its position.

5. Q. Have you read the testimony of Alexander Beckers, taken in this cause, and do you understand the devices described in his fifth answer? Please compare them with the inventions described in the Southworth reissue, and state wherein they are alike and wherein they differ?

A. I have read the testimony of Alexander Beckers, and I believe I do understand the mechanism described by him in question fifth. I understand that he had a small plate-holder made large enough to hold the plate in which the square opening was made; this plate moved in

a square plate-holder in such a way that by moving it into four different corners of the frame, so that one quarter of the plate would be exposed, and as the plate was moved into the different corners of the
frame the other corners of the plate were exposed to the lens for
371 a picture, making four pictures at least on one plate. The only
substantial difference that I see between this mechanism referred
to by Mr. Beckers in his fifth answer, and the mechanism described in the reissued patent referred to, is the absence of the hinge-plate F and the hinge-plate L.

6. Q. Please look at the Defendant's Exhibit 8, and compare it with the invention described in the patent, and state wherein they are alike and wherein they differ?

A. In making the comparison required by the question, I find in Exhibit 8, a frame substantially like the frame in Exhibit No. 15, which is substantially, in all but one particular, like the drawing shown in the patent referred to, and for convenience I will use this model, Exhibit 15, in making the comparison. Exhibit 8 has a plate-holder, which is smaller in size than the frame in which it moves, so that the plate-holder may be moved into all the four corners of the frame and expose four different portions of the da*ug*erreotype-plate to the action of the lens, through the central hole made in said frame.

The plate-holder in Exhibit 8 is held up by the pressure of a spring, acting against a button on its back, and which causes it to remain in any position in which it is placed by its pressure, making contact between the plate-holder and the face of the frame; the other end of this spring is connected to a projection upon the outside flange of the frame by a screw, which allows it to swing in a circular arc around said screw; this spring also has an elbow-joint between the button on the plate-holder and the screw to which it is joined to the frame; this allows the spring to accommodate itself to any position in which the plate-holder may be placed and keeps the face of the plate-holder in contact with the back face of the frame referred to.

This apparatus, number 8, has no hinge-plate F, as shown in the patent, nor has it the exact form of the hinge-plate L, but it has a substantial mechanical equivalent for said hinge-plate L, in so far as the sustaining of the plate-holder in the upper corners of the frame is con-
cerned, so that the whole apparatus operates substantially in the
372 same manner to produce the same result, or at least in a manner
which is substantially equivalent to the one shown in the patent.

7. Q. Do you find in Exh. 8 a device which serves as a guide to the movement of the plate-holder, and if yea, please compare such device with the guide-piece L of the patent.

A. I do find such guide, that is to say, the side of the square frame, or rather the flanges which project at the sides of the square frame; the operator, by following these sides, and keeping the sides of the plate-holder against the flanges upon the sides of the frame, can guide and put into position the plate-holder for taking a picture in the four corners of the plate. As far as the two pictures made, when the plate-holder is placed in the right and left hand lower corners of the frame, the action is identical in both machines, but on the two upper corners the upper surface or upper flange of the frame forms the guide in Exhibit 8; whereas, in Exhibit 15, the upper edge of the hinge-plate L, under ordinary circumstances, would perform this office. In reference to the lowering of the plate-holder from the upper right-hand corner to the lower right-hand corner, both machines may be used in exactly the same manner, and ordinarily would be used exactly alike, but yet the guide on the plate "L," for lowering the plate-holder vertically, without the assistance of the hand to keep it parallel with the right hand side of the frame, is not shown in Exhibit 8; as the principal object is to have the plate in the corner of the frame when the picture is taken; this, in my opinion, would be a very immaterial difference.

8. Q. Have you read, and do you understand the plate-holder and camera described in the 9th answer of James B. Sinsabaugh? Please compare them with the invention described in complainant's patent.

A. I have read, and I do understand said answer, and the mechanism described therein (provided that the word "slot," in the 79th folio, is read "slat," and which, after reading the context and the remainder of his testimony, I am satisfied is the word or thing he meant to describe).
This apparatus was constructed to take several pictures by moving
373 the plate-holder laterally only, and, as I understand it, it was
done by covering up a portion of the hole in the frame opposite the lens, and exposing one-half of the daguerreotype plate at a time, and thus taking two pictures on the same plate.

In order to expose one-half of the plate at a time, the slide was first withdrawn half way, and a picture taken between the end of the slide and the slat which stops up the lens-opening, then pushing the plate-holder and plate half the width of the plate forward, and withdrawing the slide the whole distance a second picture was taken. This operation was in effect similar to the effect which would be produced in taking two pictures with Exhibit number 15 with the hinge-plate "L" wide open, and the plate-holder lowered to the lower right-hand and left-hand corners of the frame, with, as I understand it, this difference: that where only one side of the lens-opening in the frame was stopped off with a slat, the pictures would not be taken directly in the central axis of the lens, although both pictures would be exactly alike; whereas, in Exhibit 15 the pictures would be both taken in line with the central axis of the lens, if the lens was so set; if, however, in the machine referred to by Sinsabaugh, the first picture was taken centrally with the central axis of the lens, all would be so taken. The word "laterally," when referring to the 9th answer, should, I think, be "vertically"—the pictures then would be one above the other, rather than side by side.

9. Q. Have you read and do you understand the camera and plate-holder described in the 5th answer of Rodney H. Dewey. Please compare them with what is described in the complainant's patent, and point out wherein they are alike and wherein different?

A. I think the description in the latter part of the answer of question 5 somewhat ambiguous; but I think I understand the mode of operation described in the first part of the answer to be, that Mr. Dewey used a plate-holder covered with a diaphragm having a number of openings in it, directly over the plate, then the diaphragm, plate-holder and
all, were slid downwards into the focus of the lens to take the
374 first picture, and then further slid downwards through the bottom
of the camera-box and also through the stand into a dark chamber below, at the same time exposing another part of the plate and another opening in the diaphragm to the action of the lens, thus making a second picture.

I don't think I understand the second part of this answer in reference to the taking of five pictures without reading the remainder of the deposition. I judge, from reading the remaining part of his testimony, that after taking two pictures the plate-holder was removed, and another diaphragm put over exposing another part of the plate, refocussing the instrument on the other side of the plate, where the pictures were to be taken. After taking these two pictures last referred to, I understand he removed the plate-holder again, and again changed the diaphragm, refocussed the instrument in the centre, making five. If I am correct in this understanding of the operation, the pictures were taken one above another, removing the plate-holder twice to produce five pictures. In the first instance, he took two pictures upon the same plate, without removing the plate-holder from the frame.

Comparing this operation with the operation of the mechanism described in the patent, the result produced is the same as that described in the patent, the means of accomplishing it differing in that the plate-holder was removed in the Dewey machine after taking two pictures, whereas in the patented machine the plate-holder is not removed in taking the whole four pictures; and in that Dewey's slide had only a vertical movement, whereas in the patented machine it is arranged to have both vertical and horizontal movements; and in that Dewey used a diaphragm over the plate, whereas in the patented machine no diaphragm is used; and further, in that changes in the Dewey machine were required to be made in refocussing the instrument, which is not done with the patented machine between the times of taking the two sets of duplicate pictures.

10. Q. How does the device described in Dewey's answer to X-question No. 12 differ from those described in his fifth answer?

375 A. In giving the last part of my last answer, I have particularly referred to his answer to X-question 12, and I think I can say nothing more to throw light upon it.

11. Q. Please look at the devices shown in Defendant's Exhibit No. 9, and described in the 7th answer of William A. Pratt, and compare them with those of the patent, and point out wherein they are alike and wherein they are different?

A. I have looked at the devices in Defendant's Exhibit No. 9, and also at the said answer of William A. Pratt, and I think that said answer is substantially a correct description of the Exhibit No. 9, and that Exhibit 9 is a fair embodiment of the mechanism described in the 7th answer of William A. Pratt.

12. Q. Do you find in Exhibit 9 any device for holding and guiding the movement of the plate-holder; and, if yea, what is it, and compare it with the piece "L" of the patent?

A. I do find in Exhibit 9 a means for guiding the plate-holder. I refer to the flanges upon the sides of the frame, against which the sides and corners of the plate-holder may slide. It is held in the upper corners of the frame to prevent it from falling, by contact with the back face of the frame, and the front part of the wooden covering between which and the said back face of the frame the plate-holder slides. This exterior covering extends also down on the flanges at the side of the frame, covering a portion of the plate-holder, when it is placed at the lower right and left corners of the frame, and this covering assists gravity in holding the plate-holder in position, by reason of its contact with the outside face of the plate-holder pressing its front face against the back face, as I have called it, of the frame, or that portion of the frame in which the lens opening is made.

Comparing this mechanism with that shown in the patent, the plate-holder is held in the upper corners by pressure over an extended surface; whereas in the patent the plate-holder is held up by the upper edge of the hinge-plate "L." In the Exhibit No. 9 the plate-holder is held by friction, and by gravity in the lower corners of the
376 frame; whereas in the patent it is held, when the slide is loose

enough to fall by its own weight, by gravity alone. If the latch “L” were entirely removed from the patented model, and the plate-holder worked in the frame, so that it had close contact with the frame on its face, and with the hinge-plate “F” on its back, the action of the two pieces of mechanism would be almost identical, the contact referred to taking the place of the hinge-plate “L,” and the operation of the mechanism being substantially changed only in reference to the freedom of movement of the plate-holder.

Adjourned to Nov. 12th, 1874, 10 a. m.

NEW YORK, *Nov.* 12, 1874—10 a. m.

Met pursuant to adjournment.
Present, counsel as before.

And the witness, W. C. Hicks, in answer to further interrogatories propounded by Mr. BLAKE, says:

13. Q. Please read the testimony of Edward F. Dunshee, and state whether you understand the devices therein described. Please compare them with each other and with the invention of the plaintiff's patent?

A. I have read the testimony of Edward F. Dunshee. I think I understand substantially the contrivances therein described, the first of which, he refers to, as I understand it, in answer to question 13. In this case, I understand that he placed a diaphragm in the lower half of the lens-opening of the frame, and then put in his plate-holder, so that the lower part of the plate upon which the photograph was taken should be opposite the upper part of the lens-opening, or that part which is not covered with the diaphragm. He then withdrew the slide, exposing to the action of the lens the lower half of the plate, and took a picture, the lens being focussed for the purpose. He then pushed the
plate-holder downward so that the lower part of the plate was
377 covered by the diaphragm, and withdrew the slide so as to ex-
pose the upper part of the plate to the action of the lens, when a second picture was taken as before; he thus had two pictures upon the plate; the slide now having been closed in again, the plate was removed.

The second method, described by him in answer to question 43, and what follows: I understand he placed a diaphragm in a hole made in the frame through which the lens operates upon the daguerreotype plate, and turned the camera down sidewise, leaving an opening in the center of the hole in line with the axis of the lens. This hole, he says, was about an inch in diameter. He then passed the plate, as I understand it, far enough over the opening of the diaphragm to take an impression. After taking one impression, withdrawing the slide sufficiently to expose the part of the plate upon which he wished to take the impression, and he repeated the movement of the plate-holder, exposing different portions of the plate, and in some instances made, as he says, three pictures side by side.

The difference between these two constructions referred to, are that, in the first one, two pictures were taken, one above the other, vertically, and in the second, one, two, or three pictures were taken side by side horizontally, using a diaphragm with a hole in a line with the axis of the lens; whereas in the first apparatus the pictures were taken above the axial line of the lens, as I understand it.

Comparing these different apparatuses with the patent, the result produced is substantially the same as if the plate-holder was moved in the first instance only up and down on either side of the frame, excepting that the pictures in the patent would be taken in the axial line of the lens.

Comparing the second apparatus with the machine shown in the patent, the result would be identically the same, provided two pictures only were taken in each case, and the patented machine was operated in horizontal lines only from left to right or right to left.

378 In both of these methods of taking pictures referred to by Dunshee, the stops shown in the machine of the patent were omitted, as I understand it, but otherwise the process of taking the pictures bears the relation that I have mentioned in the forepart of this answer.

14. Q. Compare Exhibit C, annexed to the testimony of Silas Selleck, with the invention described in complainant's letters patent, and state wherein they are alike and wherein they differ?

A. As I understand Exhibit C, it is almost identical in its mode of operation with Exhibit No. 8, before referred to by me, and bears the same relation to the patented machine as said Exhibit number 8. Said Exhibit C has a frame with flanges upon the edge, forming a square recess in the back of the frame, opposite the lens; said frame has a square hole in the center, covered by a slide. There is a plate-holder located within the flanges of the frame, made with right-angular corners, and small enough to have a motion within the flanges both vertical and horizontal. There is an elbow-joint, one end of which is attached to one of the flanges of the frame by a screw or pin, and the other end is pivoted to the center of the back of the plate-holder or the pad of the plate-holder, which keeps the plate in. This plate-holder can be moved into the four corners of the frame, and if the elbow-joint is a spring the plate-holder would be retained in said corners by the effect of its pressure upon the back of the plate-holder. The flanges of the frame may act as guides for sliding the plate-holder from one corner to another, and act as stops to locate the plate-holder in said corners. There is no guide corresponding with the portion of the plate "L" of the patent, which is cut away for the block to slide down by; but in other respects it produces substantially the same result, by substantially equivalent mechanism, for the purposes for which the machine is constructed.

15. Q. Have you read, and do you understand, the devices described in the testimony of Arthur Cobden? If yea, please compare them with those of the patent, pointing out wherein they are alike, and wherein they differ.

(Objected to, as inadmissible under the answer.)

379 A. I have read, and I do understand, the said mechanism, or method of taking pictures. He had a small tube, with a frontal box which I understand to be the frame with a camera-lens, and he took several pictures in a horizontal line, one after another, by sliding the holder over the opening in the frame opposite the lens horizontally. Pictures were taken centrally with the axial line of the lens, the same as in the patented machine, when the plate-holder is moved in only a horizontal direction, except that he had no stops, as I understand it, to limit the extreme movements of the plate-holder in a horizontal direction. The description of the mechanism is not sufficiently definite to compare the minute details, and I can only compare the two mechanisms generally.

16. Q. Have you read, and do you understand, the apparatus described by George McKown in his testimony in this case? and, if yea,

please state what you understand it to be, and compare it with the devices described in the plaintiff's patent.

A. I have read the testimony of George McKown, and I also heard it given. It is a little ambiguous in some of its parts, and yet I think I understand it. This plate-holder was furnished with two slides; one of them, which I understand to be the one nearest to the daguerreotype plate, had an aperture in it, about half the size of the plate. The plate-holder, with both slides in, and the aperture in the lower slide being covered by the second slide, was then inserted in the frame, so as to bring the aperture over the end of the plate, opposite the opening, to the lens; then the covering slide was drawn back, and a picture taken; next both slides were drawn back, exposing the other end of the daguerreotype plate to the action of the lens. Thus, two pictures were taken side by side upon one plate, central with the axial line of the lens. This apparatus, when compared with the mechanism shown in the patent, would produce identically the same result as the patented machine would produce when the plate-holder was moved laterally only, the mechanism being different, and the limiting stops of the patented machine being wanting; otherwise the mechanism is similar, although operated in a different manner.

380 17. Q. In the mode of operation you have described, would not two pictures be taken on the same part of the plate? Is this your understanding of McKown's apparatus; if not, please state what you mean?

A. Of course I understand that after the first picture is taken, the plate-holder, slides, and all were moved, so as to expose the other end of the daguerreotype plate. I inadvertently left it out in my preceding answer. McKown expressly says he did this, in answer to question 9.

18. Q. Have you read, and do you understand, the camera-box described by Seth E. Parsons in his deposition in this cause? If yea, please compare it with the complainant's patent, stating wherein they are alike and wherein they differ?

A. I have read the testimony, and also heard the testimony given by Mr. Parsons.

I understand that he covered up one-half of the lens-opening in the frame with a thin piece of board, then inserted his plate-holder, so that one end of the plate for the daguerreotype was over the uncovered portion of said opening; the slide was withdrawn and one picture was taken. The plate-holder was then pushed entirely into the box, and the slide was entirely withdrawn, exposing the other half of the daguerreotype plate to the action of the lens, through the uncovered portion of the opening.

This apparatus was capable of producing two pictures upon the same plate, but whether they were arranged vertically, one above the other, or horizontally, one beside the other, I am not informed.

This apparatus belongs to a class of structures which I have previously compared with the mechanism in the patent, and probably was similar to that described by Sinsabaugh, which I have previously compared.

19. Q. Have you read, and do you understand, the camera-box described by Schoonmaker in his answer to the 3d question? If yea, please compare it with the plaintiff's alleged invention, and state wherein they are alike and wherein they differ?

A. I have read the testimony of Mr. Schoonmaker, as given in his answer to the 3d question, and I understand the apparatus to be

381 substantially the same in kind as the one last described by me in my last answer; and I can say, in reference to the mechanism, substantially the same words as I said in reference to the mechanism referred to in my last answer, and I make the same comparisons.

20. Q. Answer the same question regarding the apparatus which Schoonmaker describes, and which he says he purchased from the Meade gallery?

A. I have read the testimony referred to, and I understand that it was an apparatus almost identical with that shown in Exhibit No. 8, and similar to Exhibit C, Tompkins, and bears the same relation to the patented machine substantially as those two exhibits, which I have previously compared with said patented machine in this examination; the only difference which I particularly notice being that the plate-holder was pressed against the back face of the frame by a spring attached to a block, which rested upon the back of the plate-holder in a position central, as I understand it, with the frame, and under which the plate-holder was moved from corner to corner of the frame. This spring referred to had no elbow as in Exhibit 8, and kept the block in place by its pressure, without having the capacity for moving, as it would have if it had the elbow joint. This apparatus was arranged so as to take a picture in the center of the daguerreotype plate, as well as the corners, making five pictures taken on the plate. As I have said before, when comparing Exhibit 8 and Exhibit C, Tompkins, the flanges upon the sides of the frame furnish guides and stops for limiting the movement of the plate-holder, but no groove, as shown in hinge-plate L of the patent, to guide in both directions the falling of the plate-holder in a vertical direction.

21. Q. Please examine the testimony of Charles Thayer in this cause, and state whether you understand the devices therein described, and compare them with the plaintiff's alleged invention, and state wherein they are alike and wherein they differ?

A. I have read the testimony of Charles Thayer, and I fully understand the second process he describes for taking daguerreotype
382 pictures. The first one he does not fully describe; but, as far as he does describe it, I understand that he took more than one picture in a camera without moving the plate-holder, and took them centrally in reference to the plate-holder, and, therefore, I suppose centrally to the opening for the lens. The second apparatus which he describes, I understand to be substantially identical with the class of daguerreotype mechanisms to which I have referred in answer to question 18 of this examination, and it bears the same relation to the machine described in the patent as the apparatus described in answer to that question.

22. Q. Please look at Exhibit No. 6, W. W., examiner, and assume it to be furnished with a sliding plate-holder, lens, and a ground-glass plate, so as to make it a practical camera, and compare it, thus furnished, with the devices of Sinsabaugh, Dewey, Thayer, Dunshee and others of similar character in this cause, where the plate-holder has a lateral movement only, and state wherein they are alike and wherein they are different.

A. I have examined said Exhibit 6, and have compared it with the mechanism of the different witnesses mentioned, where the plate-holder had only a lateral movement, and I understand that the operation of the several machines, when compared with this Exhibit No. 6, would be practically the same, when the picture was taken directly in the center of the opening in the frame through which the lens acts, or, in other words, when the picture was taken centrally with the central axis of the lens. And in reference to those contrivances described by the witnesses referred to in the question, where a diaphragm or slat was placed in the opening for the lens to operate through, covering up half or a portion of said opening, the action would be substantially identical, provided a diaphragm or slat, or piece of thin board, were placed in Exhibit 6 to cover up a corresponding portion of the lens opening.

23. Q. Please look at a copy of two pages of "Humphrey's Journal, Defendant's Exhibit 5," and read the passage entitled "Stereoscope camera-box," and state whether or not the device there described is like the plaintiff's patent, giving your reasons. 383

(Objected to as irrelevant.)

A. I have read said description of "stereoscope camera-box" referred to. I find a plate-holder for containing a plate about twice as long as it is wide, supplied with two slides to cover up said plate, each one reaching half way of the length of said plate, one arranged to be slid out from one end of the plate-holder and the other from the other end of the said plate-holder, so that half of said daguerreotype plate may be exposed at a time.

The daguerreotype plate having been placed in the plate-holder, both slides are pressed in, entirely covering the daguerreotype plate. The plate-holder is then inserted in the camera-box and one end of the plate located centrally with the lens-opening, and the slide withdrawn which covers that end of the plate, and a picture taken. That slide is then pressed in, covering up the picture taken, and the plate-holder moved so that the other end of the daguerreotype plate shall be opposite the lens-opening, when the second slide is withdrawn, the plate exposed to the action of the lens, and a second picture taken, and the slide is again returned to its position and the plate-holder removed from the camera. This apparatus would take two pictures on the same plate, side by side, in the central axis of the lens, and the result produced would be the same as the result produced in taking two pictures in the machine shown in the patent. When moving the plate-holder in one direction only along the side of the frame, from corner to corner, the mechanism in the two machines would be substantially the same, excepting that in this apparatus described in Humphrey's Journal I find no stops to limit the extreme movements of the plate-holder.

Cross-examination waived.

WM. C. HICKS.

Subscribed and sworn to the 12th day of November, 1874.

E. G. THOMPSON,
Examiner.

384 It is stipulated by and between the parties hereto that the testimony of Samuel J. Thompson, in the suit of Simon Wing vs. C. C. Schoonmaker, printed on pages 70 to 74 and 96 to 98, inclusive, of the Supreme Court record of said cause, may be read in evidence herein with the same force and effect as if taken in this cause, which testimony is as follows:

1. Q. What is your name, age, residence, and occupation?

A. My name is Samuel J. Thompson; I am forty-four years of age; I reside in the city of Albany, N. Y., and am a photographer by profession and practice.

2. Q. How long have you been engaged as a photographer, or picture maker by photography?

A. I have been so engaged since 1847.

3. Q. How long have you carried on the business as principal?

A. All but one year of that period.

4. Q. Have you examined Southworth's patent and the reissue thereof, and the specifications therein referred to in the plaintiff's complaint in this suit, so that you understand the claim in its reissue, and the principles upon which said claim is founded, and the mode of operating under the plaintiff's patent?

A. I have examined, and understand the claim and the principles upon which it is based, and the mode of operating under such patent.

5. Q. How long ago did you see photographers use camera-boxes in connection with the sliding plate holder which made more than one photographic picture without removing the plate-holder from the camera-box? If you have seen such, state when and where, and by whom used, and how many pictures were made without removing the plate-holder from the camera-box?

A. I saw them the first year I went into business, which was in the fall of 1847, in Douw's buildings, in the city of Albany. Such box was used by me at that place in taking pictures at that time, and it made two pictures without removing the plate-holder from the camera-box.

385 (Plaintiff's counsel objects to the last question and answer; to the question on the ground that instructs the witness as to the nature of the answer he is to give, and how to give it, and is leading; and the answer is objected to on the ground that it is given under instructions from the defendant's counsel by the question. And the plaintiff's counsel asks that both the question and answer be stricken out for the reasons given.)

6. Q. Did you, at the time referred to in the last question, know of any other photographers using, in making photographic pictures, the camera-box with sliding plate-holder, which made more than one photographic picture without removing the sliding plate-holder from the camera-box?

A. I knew that Beekman Cook used it, at the Exchange buildings, in Albany, at that time; he taught me how to use it. I also saw pictures that were made at Meade Brothers', in Albany; there were two of them on a plate—I mean photographic pictures.

7. Q. Was there any other means known at that time of making two photographic pictures on a plate except by the sliding plate-holders?

(Plaintiff's counsel here wishes to call the attention of the court to the manner in which the questions are propounded to this witness, as they are calculated to lead the witness and instruct him as to the answer desired.)

A. I did not know of any other means.

8. Q. Did you know that Meade & Brothers made and sold photographic pictures, more than one on the same plate, after the year 1847; and, if so, how long did they so make and sell photographic pictures with the sliding plate-holder, and with more than one picture on a plate?

A. I don't know that they did sell any of them, and I don't know that they made them with the sliding plate-holder, as I did. I was not in their operating rooms. I only saw the pictures made there.
386 Operators at that time were cautious not to let others know how or by what process they produced their pictures.

Recess for dinner.

At 3 o'clock p. m. the direct examination of Samuel J. Thompson was resumed, as follows:

9. Q. Did you know of any other mode of making photograph pictures with more than one picture on a plate at the time you say you saw such photographic pictures made by Meade & Brothers, as mentioned by you in your answer to the sixth interrogatory, than by the sliding plate-holder which was used to make more than one picture on a plate without removing said plate from the camera-box, as you have described their manufacture in some of your answers herein, by yourself and Cook, in Albany.

(The plaintiff's counsel makes the same objection to the last question as he has made heretofore, and calls the attention of the court to the form of such questions as before.)

A. There was no other mode of making such pictures at that time that I know of, and if there had been I think I should have known it.

10. Q. Did you continue to see, from time to time after 1847, in the photographic gallery of Meade & Brothers, at Albany, photographic pictures made with more than one picture on a plate, until the time Meade Brothers stopped business at Albany?

A. I did.

11. Q. Please state how the principles and operation of the cameras used by yourself and Cook, with the sliding plate-holder, as before described by you, and as used by you and him in making pictures, compare with the principles and operation of the camera described in the claim of the plaintiff in the reissued patent in this suit?

387 A. The principles and the operation are the same; that is, in making pictures by myself and Cook, we worked upon the same principles and used the same mode of operation.

The witness being cross-examined by plaintiff's counsel further testified as follows:

1. Q. Are you familiar with the drawings, descriptions, and claims of letters patent upon mechanical inventions?

(Defendant's counsel objects to the question as calling for testimony entirely immaterial and foreign to the questions in issue in this suit, and to the claims of the patent referred to in the complaint herein.)

A. I am, somewhat.

2. Q. How many patents upon mechanical inventions have you ever examined and studied since the year 1847.

(Defendant's counsel objects to the question as calling for immaterial testimony.)

A. Two or three.

3. Q. What inventions, and what patents thereon, and when and where, did you make examinations spoken of in your last answer?

A. On the bromide patent, and patent ambrotype, and the sealing fot picures with balsam, known as the Cuttings patent, and the patent hallotype.

4. Q. For what purposes did you make the examinations spoken of in your last answer, and under what circumstances were they made?

A. I made them to see if I could protect myself in the use of them as I had bought them before I had examined them thoroughly; that is all I studied them for; I procured copies of them.

5. Q. About how many patents upon mechanical inventions have you personal knowledge of?

(Defendant's counsel objects to the last question as calling for immaterial testimony.

388 A. I have looked over the patent you have here since I have been here, and examined the drawings and specifications and claims thereof; I have worked on other patents from the drawings; I am a mechanic, and made patterns from the drawings as requested; I understood the principles of them.

6. Q. What patents and what drawings have you worked upon, and when and where, as testified to in your last answer?

A. In 1846 and 1847 I worked on a patent bridge in Massachusetts, and on patent beehives in Albany. I have done lots of that kind of work. I also worked on another patent bridge in Worcester, Massachusetts. I had charge of all the braces in that department. There was another boss who had charge of a portion of the work, and I of the branch I have spoken of. I also had charge of one of the spans of the bridge 190 feet long. It was a double track bridge, built under the Howe patent, and I took the charge of one side, and another man of the other side of said bridge. I have made patent gates and patent drags from drawings. I could not enumerate all the work I have done. I worked seven years at carpenters work.

7. Q. From all your labors, as testified to in your last answer, from what did you work, specifications or drawings, and by whom furnished?

A. From drawings; and the drawings for bridges were furnished by Stone & Harris, and the drawings of beehives by a man named Winslow. The drawings for the gates and drags were furnished me by Cæsar Stone, who is a builder, and of whom I learned my trade.

8. Q. How did you know that the bridges you worked on, and the beehives, and the drags, and the gates, were patented?

A. I know the beehives were patented, for I knew the man who patented it. I don't know that the bridges, drags, and gates were patented, except by hearsay. I did not see the patent or specifications of the beehive; I only saw the drawings, and never saw either of the others.

389 9. Q. Did you ever construct a machine of any kind from the decriptions given of the same in print or in writing? I mean to exclude therefrom drawings.

A. I have made articles from writings many times. People would write to me, giving me a description of what they wanted, and I have made them accordingly. I have also made pictures from such decriptions, and am now making some.

10. Q. What articles have you made in the manner testified to in your last answer?

A. I have made doors, sash, blinds, and lots of things. In my business people would write to me about pictures they wanted, and I have made them from their descriptions. I can show letters from parties I have never seen, desiring things to be made for them, and I have made them according to orders. I have received letters from gentlemen in Kentucky, describing pictures they wanted, and I have got them and forwarded them as ordered. I have also made pictures of all of Palmer's marbles for parties in New York with whom I have had no personal interview. I made pictures of that character to the amount of $4,000 in one year.

11. Q. From what written or printed descriptions of a mechanical and patented invention did you ever make the first article or thing?

A. I made ambrotypes from a written description, and also hallotypes from such descriptions.

12. Q. What else besides those named in your last answer?

A. Nothing else, except beehives, as I have before testified?

13. Q. In what patent cases have you been examined as an expert upon mechanical patented inventions?

A. In no case except the present.

14. Q. Have you examined the specifications of the patent in suit; and, if so, when, where, and for what purpose?

A. I have examined the drawings here, and I have seen a part of the specifications in Albany that covered the box and the holder. I never read the whole of the specifications. I examined it for the reason that we were all threatened with being sued.

390 15. Q. What part of the specifications in the patent in suit did you examine for that reason, and about how often?

A. I examined that part of it at the last end, containing the claim, as contained in the paper now before me, marked Exhibit B, Wing.

16. Q. Have you not been threatened with litigation for an infringement of the patent now in your hands, and marked Exhibit B, Wing?

A. Not personally, except that Mr. Hill, a witness that has been examined here, told me that we would all be sued for such infringement; that they had tackled the artists in Troy, and intended to pursue those at Albany also. This was told me by Mr. Hill some time ago, but since this suit was brought.

17. Q. Are you now engaged in manufacturing pictures, or in operating the invention and improvements specified in the patent in suit, and embraced in the claim thereof?

(Defendant's counsel objects to the last question as calling for testimony wholly immaterial; that it is of no importance in settling the issues in this case as to whether the defendant in this case has infringed upon the plaintiff's patent or not; or whether he is infringing or not. And said counsel states to the witness that the witness can decline to answer this question if he chooses to do so.)

A. I decline to answer the question, because I should criminate myself. I do now, however, answer the question by saying that I do make them, and have made them, and shall continue to make them for anybody that comes to me. After I had given my answer as above I further added that I had made such pictures ever since I had been in business, and should continue to do so. I commenced said business in 1847.

18. Q. Where is the machine which you used in 1847, containing the invention and improvements described, set forth, and claimed in the patent in suit, in the manner testified by you in your last answer.

391 A. I cannot tell.

19. Q. Where is the machine which, in 1857, ten years later than 1847, you used, and which contained the invention and improvements described, set forth and claimed in the patent in suit?

A. I do not know.

20. Q. Will you produce on this examination, and for the hearing of this cause, any machine or instrument containing the invention and improvements described, set forth and claimed in the patent in suit, and used by you in the manner you have stated on this examination, in the year 1847, or during any year for ten successive years thereafter?

A. I could not produce such machine or instrument.

The witness, being further examined by the defendant's counsel, further testifies as follows:

1. Re-D. Q. What is the reason why you cannot produce the machine

or instrument called for by the 20th cross-interrogatory, just answered by you?

A. The reason is, as I stated in answering that interrogatory, that all of my photographic property was sold in 1864, on the dissolution of a partnership between myself and my then partner, and I do not know that I can now find or procure such instrument or machine. I am ready to furnish any proof or evidence in my power, or within my reach.

SAMUEL J. THOMPSON.

Subscribed and sworn to before me, this 6th day of Sept., 1867.

JOHN T. LAMPORT,
United States Commissioner and Examiner
for the Northern District of New York.

At 10 o'clock a. m., September 23, 1867, at the office of Norton & Cowen, esq.'s, in Troy, the counsel for the respective parties were 392 present; and thereupon the counsel for defendant recalled Samuel J. Thompson as a witness, who, being further examined, testified as follows:

1. Q. Look at Exhibit O, Schoonmaker, in suit, and examine it, its construction, principles involved in making pictures by it, and the mode of operation in making photographic pictures by it; and state how it compares in those particulars with the construction, principles involved in its operation, and its operation in making photographic pictures with the camera-box and apparatus connected therewith, as made and used by you in 1847, and subsequently thereto, described in your testimony herein?

A. I have examined Exhibit O, Schoonmaker, now shown me, and it is the same precisely.

2. Q. Describe the construction and operation of Exhibit O, Schoonmaker.

A. It is so constructed as to cut off one-half of the light from the plate, while I made one picture on that end of the plate exposed, and then the plate is inserted fully into the camera-box, by which the other half of the plate is exposed to the light, and thus a second picture is taken.

(The defendant's counsel here offers in evidence a plate with two pictures or impressions upon it, and, at his request, the same is marked Exhibit P, Schoonmaker, by the examiner, who filed the same this day.)

3. Q. How did the machine or apparatus by which the pictures marked Exhibit P were made compare with Exhibit O, Schoonmaker?

A. They are the same.

4. Q. State how the pictures P, Schoonmaker, compare, as specimens of execution and art, with such pictures made by any other machine of the present day?

A. They are the same; I can see no difference. I have made pictures the same day, and with same tube, and two different boxes, but could see no difference in the pictures as to the execution.

393 5. Q. Where do you consider is the field of the lens, and what is it?

A. Wherever it will cut a sharp or distinct picture.

6. Q. Can as perfect a picture be made when the sitter is on an angle with the lens as when sitting in front of the centre of the lens?

A. It can.

8. Q. Do operators shut off part of the light from the lens when they wish to make a picture with more depth?

A. They do.

Q. How long, with ordinary wear and tear, and without repairs, will a camera-box and plate-holder last?

A. Six months; or from three to six months, according to what extent and how they are used.

Q. What is the standing of Eugene M. S. Haines, as a scientific man, in the photographic art?

(Plaintiff's counsel objects to the last question as improper and incompetent. The court is to judge from the testimony of Haines himself as to his competency as an expert.)

A. His standing is No. 1.

Q. How does it affect a sitter to sit a dozen times for a dozen pictures?

A. It must affect the eye of the person sitting who sits for a dozen pictures much more than in sitting for one or two. Sitting for pictures is tiresome.

Q. Can the twelve pictures referred to in the last question be made all at once by an instrument with a dozen lenses; and, if so, will the pictures be better or more perfect when they are all taken at once, or less so?

(Plaintiff's counsel objects to the last question as entirely immaterial.)

A. They can all be taken at once, and a majority of them would be better, for a person can look better once, or at one time, than he can in looking several different times.

394 Q. Has the mode of making photographic pictures at one sitting, by adding more lenses, been in use among photographers; and, if so, how long?

(Plaintiff's counsel objects to the last question as immaterial.)

A. It has been in use for eight or ten years; I cannot state the precise time.

(The witness being further cross-examined by the plaintiff's counsel, testified as follows:)

1. Q. The principle of Mr. Southworth's patent can be applied to a camera-box having several lenses as well as to a box containing one lens, can it not?

A. It can.

2. Q. Do not operators often have several sittings of the same person, in different positions, in order to choose the best?

A. It is customary.

3. Q. When and where did you first have anything to do with the photographic business?

A. I started in 1847 in Douw's buildings, at the foot of State street, Albany. I commenced business for myself at that time, with a partner. S. D. Humphrey was my partner.

4. Q. When did you first make pictures with the camera-box referred to in your direct examination?

A. In the fall of 1847. I had not been in the business six weeks when I began to make pictures—two on a plate.

5. Q. How are you able to fix the time in the fall of 1847? Do you rely entirely on your memory?

A. I do not rely on my memory alone. I was married before that time, and had a daughter born that year, and I quit the carpenter busi ness that fall and entered the picture business. My daughter is now living; my father died the spring after, which is another circumstance aiding my memory.

6. Q. At this length of time, what enables you to fix with exactness, not only the time you went into business but the time you first used the camera-box, to which you have referred? 395

A. I saw pictures at that time at Meade's gallery, two on a plate, and being desirous of getting all the information I could, I employed Cook to instruct me how to make such pictures, and I then paid him for such instruction; he showed me how to fix the box for taking such pictures; he then had a gallery in Albany.

7. Q. Could not all these occurrences have taken place since 1847?

A. They could not, as it was the first fall I was in business. I remained in Douw's buildings from September, 1874, to the next May, but my partner Humphrey left there soon after I went there.

8. Q. Are you able to swear that Cook showed you how to make this box between the first of September, 1847, and first of January, 1848?

A. Yes, he did; and before the spring of 1848, too.

9. Q. How can you tell that he showed you in the fall of 1847 rather than in the spring of 1848?

A. I can tell by the fact that Humphrey, my partner, went away in the fall, soon after I went there, leaving his wife to assist me in the business, and he didn't return until the next spring, when he took the business away from me; and Cook showed me while Humphrey was absent, and assisted me from time to time when I was in trouble in the business. These things are perfectly fresh in my memory.

10. Q. What was the date of Humphrey's departure?

A. I went into the business about the first of September, and Humphrey left about a week after that.

11. Q. What day did he return?

A. I could not state the day, but it was along in the latter part of April, 1848.

12. Q. What kind of pictures did you take by this process?

A. Daguerreotypes, and pictures on isinglass, or on mica and metallic plates.

13. Q. What chemicals did you then use to make the glass pictures?

396 A. Iodides and bromides, and we also used collodeon, made in a different way from that now used.

S. J. THOMPSON.

Subscribed and sworn to this 23d day of September, 1867.

JOHN T. LAMPORT,
United States Commissioner and Examiner
for the Northern District of New York.

It is also stipulated and agreed by and between the parties hereto that the Exhibit "Tompkins, D," referred to in the testimony of Edward S. Dunshee, may be hereafter put in evidence.

Defendants rest.

E. G. THOMPSON,
Examiner, U. S. C. C., S. D. N. Y.

397 United States circuit court, southern district of New York. In equity.

WING ET ALS
vs.
ANTHONY ET ALS.

It is hereby stipulated and agreed, that the testimony of the witnesses James Irving, William Rablen, James Hinds and Hugh Guyer, called on the part of the defendants herein, shall stand, and be read and used on all motions and proceedings, and at the final hearing herein, with as full force and effect as though the names of said witnesses had appeared in the answer of the defendants herein, an amendment of said answer, for the insertion of the names of said persons being waived by the complainant.

JOHN S. ABBOTT,
Sol'r for Pl'ffs.

NEW YORK, *January 10th*, 1876.

NEW YORK, *January* 10, 1876—11 a. m.

Further testimony on the part of the defendants, in pursuance or the preceding stipulation.

Met pursuant to agreement.

Present, counsel for both parties.

JAMES IRVING being called as a witness on the part of the defendants, being first duly sworn, in answer to interrogatories propounded by Mr. Blake, says:

1. Q. What is your name, age, residence and occupation?

398 A. James Irving; 58 years of age; residence, Troy; occupation, photographer.

2. Q. How long have you been engaged in the business of photographing, and kindred pursuits?

A. Since 1843.

3. Q. Did you ever make two pictures on one plate, without withdrawing the plate-holder from the box?

A. I did.

4. Q. When first, and where?

A. In 1845, at West Troy.

5. Q. How was this done?

A. I have a model which I produce. First of all, you place a division in the centre of the box. We have a slide in front for the lens, sliding opposite one of the divisions, then sliding across the other division. There was a plate-holder at the back, as shown in the model.

(Model offered in evidence marked Exhibit Irving No. 1, E. G. T., exr.)

6. Q. Did you use such a camera, with such a sliding lens-holder, to take pictures, and if yea, with what success?

A. I did; and with the usual success attending daguerreotypes at that time?

7. Q. How frequently did you use it to take pictures?

A. When we had occasion to use it for lockets, rings, pins, and, in fact, whenever we had occasion to make any small daguerreotypes.

8. Q. Did you ever make any other cameras with this sliding lens-holder; and, if yea, when and where?

A. No.

9. Q. Do you remember any one whose picture was taken with the sliding lens; and, if yea, who was it?

A. I do; Richard Lobdell, president of the West Troy Gas Company.

10. Q. Did you ever use any other means, for taking two pictures on the same plate without taking the plate-holder from the box?

A. I have.

11. Q. Please describe the apparatus you used, and, if you have a model, produce it.

399 (Model offered in evidence and marked Irving Exhibit No. 2, E. G. T., ex'r.)

A. Not having another plate-holder I used the same one that I did with Exhibit Irving No. 1.

The box, on which was attached a frame with grooves for plate-holder to slide in, with an opening half the size of the plates which I used, exposing one-half of the plate, then the other half; then removing the plate for development.

12. Q. How did you successively expose one part of the plate and then the other?

A. First of all we focused on the object-glass on the object which we wished to produce on the plate. We withdrew the object-glass, placed first the plate in the slide half way across the opening described in the former answer, then pushed the holder forward so as to expose the other half.

13. Q. Did you use this device to take pictures; and if yea, with what success?

A. I did; with the ordinary success of a daguerreotypist.

14. Q. What became of this box and sliding plate-holder?

A. A Mr. Davis had the box and the sliding plate-holder.

15. Q. Who was Mr. Davis?

A. Mr. Davis was a gentlemen who was employed at the U. S. Arsenal in making cap pouches or pockets; and part of the time while he was there I gave him instructions in daguerreotyping.

16. Q. When was this?

A. In 1847.

17. Q. What became of Mr. Davis?

A. I don't know.

18. Q. Do you know where this box and plate-holder are now?

A. I do not.

19. Q. Were you ever in the employment of Meade Bros.,' daguerreotypists, at Albany; and, if yea, when first and in what capacity?

400 A. I was. I was general superintendent of the stock and daguerreotype departments. I was with them for a short time in 1844, but not in that capacity; merely as assistant operator. In 1848, or from 1848 till 1851; as general superintendent.

20. Q. During this latter term of service with Meade Bros., did you see used there a camera-box and plate-holder like Exhibit Irving No. 2?

A. I did.

21. Q. By whom and by whose direction was this box and plate-holder made?

A. The slide was made by Mr. Guyer, a carpenter, by my direction. I don't remember who made the box; we used to pick up a box anywhere where we could find one of a size suitable, and was used usually to show how two or more pictures could be made on a plate.

22. Q. Who used this box and plate-holder at Meade's establishment?

A. I did; also Mr. Rablen.

23. Q. How long did you remain with the Meade Bros., and what

were your relations to their business during the latter part of your stay with them?

A. About three years; during the latter part of the time I was a silent partner there.

24. Q. While you were at Meade Bros'. gallery who were employed there as operators?

A. Mr. Lawyer, Mr. Anson; myself part of the time; Mr. Charles Meade part of the time; Mr. Henry operated some; Mr. McBride and Mr. Rablen.

25. Q. In 1843 you were engaged in the business of daguerreotyping; what did you do immediately after that?

A. As an amateur daguerreotypist. In part of 1843 and 1844 I was employed by White & Morgans as dry goods clerk, and occasionally as cashier; in the latter part of 1844, I was with Meade Bros. for a short time; after leaving there I went into Vermont and made daguerreotypes; returned to Troy; in 1845 I was at West Troy; in 1846 I went to England; in 1847 I returned; was in West Troy again; and in 1848 went to Meade Bros.'

401 26. Q. Now please state by what circumstances and what memoranda you are able to fix the dates you have mentioned in your examination?

A. Partly by memory, partly by documents which I have in my possession.

27. Q. You remember the suit of Wing vs. Schoonmaker?

A. I remember there was a suit of that kind.

28. Q. At that time upon what terms were you with Mr. Schoonmaker?

(Objected to as irrelevant.)

A. Not very friendly.

29. Q. At the time of that suit had you ever told Mr. Schoonmaker what you have testified to-day?

(Objected to as irrelevant and inadmissible.)

A. No, sir. During the early part of 1857 I sold one-half of the interests of my gallery in Troy to Mr. Schoonmaker, with the privilege of purchasing the other half at the expiration of a year for a stipulated sum; he accepted the offer; I afterwards opened a small gallery in Troy, at which he took umbrage.

(All but the first two words of this answer objected to as irresponsive, irrelevant, and inadmissible.)

30. Q. Besides Mr. Davis, did you instruct any one else in the method of taking two pictures without removing the plate, by sliding successive parts of the plate within the field of the lens; and, if yea, who were they, and when did you teach them?

A. I did. One was a Mr. Hinds, during the time I was at Meade Bros.'; also Mr. Rablen about the same time; there was another, a one-legged gentleman, whose name I do not remember, who was taking lessons from me in daguerreotyping.

31. Q. While Mr. Hinds was at Meade Bros.' learning was Mr. McBride there; and, if not, do you know where he was?

402 A. I am under the impression that Mr. McBride was not there while Mr. Hinds was.

32. Q. Was it before or after Mr. Hinds was there that Mr. McBride came?

A. Mr. McBride was there both before and after.

33. Q. Have you here any apparatus used at Meade's while you were there to take two pictures on a plate without removing the plate-holder

from the box; if yea, please produce it and describe its mode of operation?

(Model offered in evidence marked Exhibit Irving No. 3, E. G. T., ex'r.)

A. I have. The box was an ordinary camera-box, such as we usually used at that time; by taking a part out of the bottom of the box, placing the frame on which were two cleats, with an opening half the size of the plate which we were going to use; focusing on the object which we wished produced, sliding half of the plate across the opening exposing a sufficient time to produce one picture, then sliding the other half exposing in the same manner, and developing. Now, I would say here, that this holder had a larger opening than the one that we made the pictures with.

34. Q. Where was the opening with reference to the field of the lens?

A. It was in the centre.

35. Q. When did you first see a device like Irving Exhibit 3, adopted as you have described?

A. In 1848.

36. Q. You have stated that the first box with a sliding plate-holder like Exhibit Irving, No. 2, was used and carried away by Mr. David in 1847; do you remember when you first saw this box and plate-holder?

A. In the latter part of 1847, I think, in about the months of July or August.

37. Q. How do you fix this date?

A. By a memorandum.

38. Q. Will you please produce the memorandum and state what it is?

A. A copy of an advertisement in the West Troy Advocate,
403 dated May the 4th, 1847. I have been able to find only one copy
and that is in possession of the Holmes family; I obtained permission to copy it, as they did not wish to have the file defaced.

The following copy of the advertisement referred to is here put in evidence:

[Copy from the West Troy Advocate.]

DAGUERREOTYPE MINIATURE ROOM.

Next door to Mr. C. H. Denir's office, in the building opposite the Exchange. The subscriber respectfully informs the citizens of West Troy and vicinity that he has taken the above room for a few weeks for the purpose of taking daguerreotype miniatures, and solicits an inspection of his specimens. Having just returned from Europe with all the recent improvements in the art, he flatters himself to be able to give entire satisfaction to all who may favor him with their patronage, both as regards work manship and price.

Instructions carefully given on moderate terms. Hours from 9 a. m. to 5 p. m.

J. IRVING.

West Troy, *May* 4, 1847.

And the witness being cross-examined in answer to interrogatories propounded by Mr. Abbott, says:

39. X Q. How many camera-boxes have you in use at the present time, and of what construction, description, and of whose manufacture?

A. I have four. One made, I think, in England; an imported box. I use it for making photographs of various sizes, from eleven by fourteen down; also for copying. Another, a stereoscopic camera, made, I think, by the American Optical Company. Another imported box, for making photographs from six by eight down. The fourth is a small box, used for copying and making small pictures.

40. X Q. With either of these camera, do you take more than one picture upon the same plate, without removing the plate or plate-holder from the camera.

A. I do not, except by using two tubes or lenses.

41. X Q. When did you cease to be a silent partner with Meade Brothers?

A. In 1850.

404 42. X Q. In what part of 1850?

A. I am not positive.

43. X Q. Was the arrangement which you made with Meade Brothers, by which you became a silent partner, in writing?

A. It was.

44. X Q. Will you produce it, or a copy of it?

A. The copy has been mislaid.

45. X Q. When that partnership ended, were there any writings made in relation to its termination?

A. There was.

46. X Q. Have you any such writings?

A. I have not.

47. X Q. Have you any memoranda showing when that arrangement terminated?

A. I have not with me.

48. X Q. Since your partnership with Meade Brothers terminated, have you been engaged as partner with any other person or persons in the daguerreotype or photograph business?

A. I have.

49. X Q. With whom, during what time, and in what place or places?

A. With Mr. Christopher C. Schoonmaker, from February, '57, to February, '58, in the Market Bank building, in Troy.

50. X Q. Since February, 1858, have you been engaged in the daguerreotype or photographic business on your account and without having any partner?

A. I have.

51. X Q. In what place or places?

A. My business is outdoor photography, so that I travel anywhere in the vicinity where business may call. From about the middle of '58 until 1861, I was in a photographic room in Congress street, Troy. Since that time my occupation has principally been out-door photography.

52. X Q. During any of the time since February, 1858, have you used any camera with plate-holders, by which you have taken more than one picture upon the same plate, without removing the plate or plate-holder from the camera?

405 A. I have.

53. X Q. State as accurately as you can during what time or times you have used such camera and plate-holder since February, 1858, and describe the same.

A. As near as I can recollect, about the year '59 or '60 I used a camera with a slide fixed on the back of the box similar to the one described in Exhibit 2, only with, I think, twelve openings in—I used three lenses exposed across three of these openings, slid the plates along across the other three raised the plate-holder opposite three openings above and back over the other three, making twelve pictures on one plate.

54. X Q. During the time referred to, that is, since February, 1858, have you used any other camera with plate-holder, by which you could take more than one picture upon the same plate without removing the plate or plate-holder from the camera, besides the one described in your last answer?

A. I have.

55. X Q. Describe the same, and state during what time it was used.

A. By making two pictures on a plate, by two lenses, I have used it very frequently since.

56. X Q. During the time referred to, that is, since February, 1858, did you use any other camera with plate-holder, by which you could take more than one picture on the same plate without removing the plate or plate-holder from the camera, besides the two last described by you?

A. I have used several stereoscopic lenses that I have made pictures with.

57. X Q. I do not think you understand my last question. Examiner will again read it to you, and then please answer it.

A. I have used no other boxes than the two I have described.

58. X Q. From whom did you obtain the camera and plate-holder described in your 53d answer?

A. I think it was from Mr. Seth E. Parsons or Mr. Sisson, his employer.

59. X Q. Where is that box and plate-holder?

406 A. I don't know.

60. X Q. When and where did you last see it?

A. I think about the year 1860, in Troy, at my gallery.

61. X Q. Who made or manufactured it?

A. I don't know.

62. X Q. While you were in company with Mr. Schoonmaker, did you and he, or either of you, or your employees use any camera with plate-holder, by which you took more than one picture on the same plate without removing the plate or plate-holder from the camera?

A. Not to my knowledge. During the year of 1857 I went to England, and remained there some time; what was done during my absence, I don't know.

63. X Q. In your 26th answer you say you fix the dates you have mentioned partly by documents, which I have in my possession. Have you here the documents referred to in that answer?

A. Yes, sir.

64. X Q. Who made Exhibit Irving 1, and when?

A. That was made by Blair & Sternburgh, about the year 1845.

65. X Q. Where was it made?

A. At Troy. I don't mean the model.

66. X Q. What do you understand by "Exhibit Irving 1," in the 64th cross-question?

A. I mean that Blair & Sternburgh made a box similar to the model marked Exhibit Irving 1.

67. X Q. Where are Blair & Sternburgh now?

A. I don't know.

68. X Q. Where were they when you last knew them?

A. In Troy.

69. X Q. When did you last see either one of them?

A. I think it was in the latter part of the year '45.

70. X Q. If you have any "documents" or document in which there is any allusion or reference to the camera or plate-holder, of which you say Exhibit Irving 1 is a model, please produce the same.

A. I have not.

71. X Q. While the camera and plate-holder, referred to in the
407 last question were in your possession, who, if any one, operated
with the same or saw it in operation or examined it?

A. During the time that I was in West Troy, I had a gentleman learning with me, named Johnson; and Richard Lobdell, of West Troy, sat for the pictures; but he scolded me pretty severely for sitting him for such a length of time, but when he saw two pictures on one plate, he appeared to be somewhat elated; one of those pictures was put into a locket, and the other into a small case; I made others; amongst others, Mrs. Ebenezer Wiswall; the name of the others I do not remember.

(All of the answer after the word "pictures," and commencing with the word "but," is objected to by complainant's counsel, as irresponsive.)

72. X Q. Please give the name and present residence of said Johnson?

A. I don't know.

73. X Q. Is said Richard Lobdell now living, if so; where?

A. He is, in West Troy.

74. X Q. When did you make the said picture of Richard Lobdell?

A. In 1845.

75. X Q. Have you and can you produce any negative, or card, or plate, having on it two pictures, which were made by the use of the camera and plate-holder, of which you say Exhibit Irving 1, is a model?

A. I cannot. These were usually made for the purpose of putting into lockets, rings, or pins, the plates were usually cut in two for that purpose; we then tried to sell the other, if we were successful in getting the first picture in all right.

66. X Q. On or about the 27th day of December last, did you give an affidavit in behalf of the defendants in this case?

A. I did.

77. X Q. Did you not state in that affidavit, after speaking of the
camera with sliding lens used in 1845 by you, "In the early part
408 of 1846, while in Troy, I made and used another camera-box, with
a sliding lens as first described."

(Objected to as not being the best evidence, and that the affidavit itself, or copy, should be produced. And defendants' counsel tenders to complainant's counsel a copy of said affidavit.

Complainant's counsel yields to the objection, and presents the copy to be annexed to this deposition, and used the same as the original might be, and as being the affidavit given by deponent; but claims that it is admissible for the sole purpose of modifying, or effecting, the deposition now being given.

The aforesaid copy of affidavit is put in evidence, and marked Exhibit Irving No. 4. (E. G. T., ex'r.)

A. I did.

78. X Q. By whom, when, and where was Exhibit Irving 1 made?

A. The box I purchased in a store; the balance of the work was made by Mr. Peter Kennedy, who formerly was an apprentice at Blair & Steinburghs'. It was made last week in Troy.

79. X Q. Please state when, by whom, and where Exhibit Irving 2 was made.

A. It was made by the same party; with the exception of the plate-holders, the same day.

80. X Q. Give the full name of the person or persons who made the original, of which you say Exhibit Irving 2, is a model.

A. Virgil J. Davids, at the United States Arsenal.

81. X Q. Did you ever have, or use, or see in use, any other camera-box and plate-holder similar to Exhibit Irving 2, excepting the one referred to in the last question and answer?

A. I saw one when in Nottingham, England, owned by a Mr. Popperwitz, from which I got my idea of making that box. His plan 409 was an opening in a frame similar to that, and held, if I remember right, by a spring coming from the top of the camera, bent so as to hold the plate, exposing a part of the plate, making the picture, then moving that holder again over another portion of the plate, making several pictures on the same plate.

(Answer objected to, as irresponsive and a departure from the question by complainant's counsel.)

82. X Q. (de bene). You say "several pictures." How many?

A. I don't remember; several pictures. If you have a plate large enough to move over that opening, you could make as many as it would admit of.

83. X Q. (de bene). Were there cleats on the back end of that box, with grooves in which the plate-holder moved, as in Exhibit Irving 2?

A. I don't think there was.

84. X Q. (de bene). In what direction or directions, and by what means or contrivances, were the plate-holders moved?

A. That was moved over the opening in almost a circle.

85. X Q. I now repeat question 81.

Did you ever have, or use, or see in use, any other camera-box similar to Exhibit Irving 2, excepting the one referred to in the 80th question and answer.

A. I did; at Meade and Brothers' gallery, in 1848.

86. X Q. When, where, and by whom was it made?

A. In 1848, in Albany, by Mr. Hugh Guyer. What I mean, is the slides to fix on to the back of the box.

87. X Q. Where does Mr. Guyer now reside, if living.

A. In Albany.

88. X Q. Have you any documents or document containing any reference or allusion to either of the two boxes and plate-holders, of which you say Exhibit Irving 2, is a model? If yea, please produce the same.

A. I have not.

89. X Q. Where was the box, with its plate-holders referred to in the 85th and 86th cross-questions and answers, kept and used?

A. At Meade and Brothers' gallery in Albany.

410 90. X Q. For about how long a time was it so kept and used in that gallery? State as accurately as you can.

A. I don't know as I can say exactly how long. I don't think it was a very long time from the fact that it was only used for making locket and others small pictures; and also for information to those who were receiving instructions in daguerreotyping.

81. X Q. What time in '48 was that camera-box with its plate-holder made by said Guyer? State as accurately as you can?

A. I think it was either in summer or fall of '48.

92. X Q. Did it remain in that gallery while you were there?

A. I don't remember what became of it.

93. X Q. Question repeated.

A. I don't think it did all the time, for we commenced making pictures by the use of more lenses.

94. X Q. State how long that camera remained in that gallery, according to your best recollection.

A. I don't know that I can give any better answer than I have given. I don't remember positively about how long.

95. X Q. According to your best recollection, did it remain in that gallery at least two-thirds of the time while you were in the employ or connected with said Meade Brothers?

A. I told you before that I could not recollect how long.

96. X Q. Question repeated.

A. I told you before that I could not recollect how long.

97. X Q. Was it there when Mr. Lawyer was an operator there?

A. I don't think it was.

98, X Q. Was it there when Mr. Henry was there?

A. I don't know Mr. Henry. There is a Henry W. Meade and a Henry McBride. I don't remember any Mr. Henry.

99. X Q. Is either of the Meade Brothers now living; if so, where?

A. They are not.

411 100. X Q. Can you give the name of any person, and the place of residence of such person, whose picture was taken by the said camera and plate-holder which you say Guyer made?

A. I cannot.

101. X Q. Can you produce any negative plates, or card, having on it two pictures taken by the use of said camera and plate-holder?

A. I cannot.

102. X Q. Can you produce any single picture taken by the use of said camera and plate-holder?

A. I cannot.

103. X Q. Please refer to Exhibit Irving 3, and state how long you have known this camera, and where you obtained it.

A. I obtained that last week from Mr. Charles Clark, photographer, of Troy.

104. X Q. Do you know who was the manufacturer of it?

A. I do not.

105. X Q. When and by whom was the hole cut through the bottom, through which you slide the plate-holder?

A. Last week, by Mr. Peter Kennedy.

Adjourned, by consent, to January 11, 1875, at 11 a. m.

NEW YORK, *Jan'y* 11, 1876—11 a. m.

Met pursuant to adjournment.

Present, counsel as before.

And the witness, JAMES IRVING, in answer to further interrogatories, propounded by Mr. ABBOTT, says:

106. X Q. The affidavit, copy of which was presented yesterday, and to which you referred, was carefully read by or to you before signing, was it not?

A. Yes, sir.

107. X Q. Please give the Christian name of the Mr. Hinds, referred to in your 30th answer, and his present place of residence?

A. James Hinds; he resides in Schenectady, New York State.

412 108. X Q. Where is the "one-legged gentleman" referred to in the same answer?

A. I don't know, sir.

109. X Q. When and where did you last see him?

A. At Meade Brothers' gallery, Albany, about the year 1848.

110. X Q. Did you ever make any stereoscopic pictures with the use of but one lens?

A. I did.

111. X Q. Describe the apparatus which you used for such purpose, and the manner of your taking such pictures therewith?

A. The camera was an ordinary camera with one tube and lens. The camera-stand top was somewhat larger than the camera-box; on the top of that box was a triangular frame, adjustable, taking from one side of the top of the camera-stand, making exposure—moving the triangle the opposite side of the stand, placing the camera in position, making another exposure, and developing the picture in the usual manner.

(Question and answer objected to as immaterial.)

112. X Q. When did you last make any pictures for lockets or miniatures?

A. I think I made some about two years ago.

113. X Q. And from that time backward, how frequently did you make locket pictures or miniatures?

A. Occasionally when I had pictures to make of my family or friends.

114. X Q. And I suppose during the whole time you have been engaged in the daguerreotype or photographic business till within say about two years you have been accustomed to take locket pictures, have you not?

A. No, sir; I have not, excepting occasionally.

115. X Q. How frequently do you mean by the word "occasionally?"

A. My occupation for the past few years has been out-door photography; when not engaged in making pictures or views, I would employ my time at home partly for the purpose of keeping my
413 chemicals in working order, and also for the gratification of having pictures of my friends and family made by myself. I have also the privilege of making pictures in most of the galleries in Troy when they do not interfere with the regular business. I have also made a variety of experiments in company with an amateur photographer in Troy.

116. X Q. Question repeated.

A. I mean whenever I had leisure time, and had occasion to make those pictures.

117. X Q. How many years do you include in the phrase, "the past few years," in the first part of your 115th answer?

A. I have been engaged in out-door photography from the year, about 1863, up to the present time.

118. X Q. And immediately preceding that time, I mean 1863, or thereabouts, had you a gallery, or rooms, where you took pictures as a regular business?

A. Not immediately preceding.

119. X Q. When and where did you last have such gallery or rooms?

A. In Congress street, Troy, about 1861 or 1862.

120. X Q. Can you not state the time more exactly?

A. Not from memory. I sold the gallery to Burgess and Harrison about the year 1861 or 1862.

121. X Q. And from that time till you were engaged in your out-door photography as above stated, how were you employed?

A. Principally in out-door photography. In the fall of 1860, a gentleman by the name of Walker made a proposal to me to engage in the floral business—I to erect green-houses, he to take charge of the plat department, taking a share of the profits for his services. This continued about a year, when Mr. Walker left me, when I engaged others to supply his place. During a portion of the winter months, when the weather was not propitious for making out-door photographs, I amused myself by striking, cutting of verbenas, fuchias, etc., and also raising mushrooms.

122. X Q. How long had you occupied that gallery immediately preceding the time when you say you sold it to Burgess and Harrison?

414 A. From about 1858 up to that time.

123. X Q. Can you not state with more exactness the time when you commenced occupying that gallery?

A. Such a length of time having elapsed since that time that I could not be more positive without having memoranda to fix particular dates.

124. X Q. From the time you commenced occupying this gallery till you sold it to Burgess and Harrison, was your regular and principal business taking photographic pictures at that place?

A. Yes; my principal occupation—what I considered my legitimate business—was making photographs at that place.

125. X Q. How frequently during that time did you take locket pictures or miniatures?

A. Whenever called for.

126. X Q. And were they often called for?

A. Seldom a week passed but that we made more or less of them.

127. X Q. Immediately preceding the time when you commenced occupying that gallery—I mean the gallery you say you sold to Burgess & Harrison—where was your place of business?

A. In the Market Bank building, at Troy.

128. X Q. And when did you commence business at this last-named place, and when did your business at that place end?

A. It commenced in the year 1853, and ended about February, 1858.

129. X Q. And during that time you had a photographic gallery at that place, I suppose, and your business was taking photographic pictures, was it so?

A. It was. But during the year 1857 I went to England, and during the time I was absent I was not making pictures in Troy.

130. X Q. How long were you absent, and during what part of the year?

A. I left New York, I think, on the 11th of July, was in Liverpool on the 28th. I think I was absent altogether some three or four months. That was in 1857.

131. X Q. Have you been in England since?

415 A. I have not.

132. X Q. During the time your gallery was in the Market Bank building, as above stated, how frequently did you make locket pictures and miniatures, as compared with the time you occupied the gallery sold to Burgess & Harrison?

A. I think we made as many in the Market Bank building, or more than we did in the other building.

133. X Q. Where was the United States Arsenal spoken of in your 80th answer?

A. In the town of Watervliet, Albany County.

134. X Q. How far is that from your place of business, in Troy?

A. In a direct line, a little over a mile; to go by way of the bridge, about a mile and a half.

136. X Q. Please give the Christian name of Mr. Johnson, mentioned in your 71st answer, and his present place of residence?

A. I am not positive, but I think it was James. I don't know where he is.

136. X Q. When and where did you last see him?

A. In West Troy in 1845.

137. X Q. Have you any documents or document containing any reference or allusion to any pictures made by use of either of the cameras and plate-holders of which you say Exhibits Irving 1, 2, and 3, are models? If so, please produce the same.

A. I have not.

138. X Q. In your 93d answer you say, "we commenced making pictures by the use of more lenses." When did you so commence?

A. That was about the year 1848?

139. X Q. Can you not state with more exactness the time?

A. I cannot.

140. X Q. Where were the boxes or lenses obtained, and from whom, when you so commenced?

A. The boxes we purchased from two or three different parties. The principal number were manufactured, I think, by the Lewis' of New
York. Some of the lenses were imported from Whitelander &
416 Son, Vienna. The tubes were manufactured by parties in New
York, and lenses were made by a Mr. Usener and others, whose
names I don't remember at present.

141. X Q. How many lenses with one camera did you use, when you commenced using more lenses, as stated in your 93d answer?

A. Two.

142. X Q. Have you given the names of all the persons who were employed in the gallery of Meade Brothers, while you say you were in their employ, or in partnership with them. If not, please give all of them not previously named by you?

A. I think a Mr. Beekman Cook; a Mrs. Campbell, and a Mr. Denel, and a brother of mine was there a short time—that is all I remember at present.

143. X Q. Where does Mr. Cook reside?

A. I don't know.

144. X Q. When and where did you last see him?

A. In Albany—I think prior to 1860. I now remember another one—Hallenbeck.

145. X Q. Please give the Christian names, and the places of residence of the other persons named in your answer to the 142 X Q.?

A. Charlotte Campbell resides near Lansingburgh; Thorne Denel—I don't know his residence; John Irving, the last that I saw of him, he was in Troy, about six months ago.

146. X Q. Where is he now to the best of your knowledge?

A. In the vicinity of Troy.

147. X Q. Can you not answer the last question more definitely?

A. I cannot.

148. X Q. From the year 1857, onward, did you have any hostile or unfriendly feelings towards Mr. Christopher C. Schoonmaker?

(Objected to.)

A. I have not had any hostile or unfriendly feelings towards Mr. Schoonmaker. Mr. Schoonmaker had or took umbrage at my opening

another gallery in Troy after selling out my interest in the gal-
417 leries in the Market Bank building, and I felt satisfied that when
the circumstances connected with the sale of the Market Bank
gallery were properly explained, that we should still be on friendly
terms again.

(The last part of the answer commencing "Mr. Schoonmaker had," objected to as irresponsive.)

149. X Q. (de bene). Were the circumstances explained?

A. They were.

150. X Q. (d. b.). When?

A. As near as I can recollect some four years ago.

151. X Q. Can you name any person or persons, and give their present places of residence, who saw in the gallery of Meade Brothers, any camera with a hole cut through the bottom substantially as in Exhibit Irving No. 3; if yea, please do so?

A. I can. Mr. Hugh Guyer, and I think a Mr. Hinds. Mr. Henry W. Meade, Mr. John Brennan. I don't think of any others at present.

152. X Q. Do you refer to the same Mr. Hinds spoken of before in this deposition?

A. I do.

153. X Q. Where does Mr. John Brennan now reside, if you know?

A. He is dead. At the time I speak of he had rooms directly opposite Meade Brothers.

154. X Q. Have you any documents or document containing any allusion or reference to any such camera as is illustrated by Exhibit Irving No. 3, or to any picture made by the use of such camera? If so, please produce the same?

A. I have no document or documents or any picture; but remember making four pictures on one plate of a lady by a box similar to Exhibit Irving 3.

(Last part of the answer commencing with the word "but," objected to as irresponsive, and a departure on caution from the plain question.)

155. X Q. (de bene). Give the name and present residence of lady referred to in your last answer?

A. I can't do it.

418 156. X Q. (d. b.) Can you give either?

A. I can neither give the name nor the residence.

157. X Q. (d. b.) Can you give the name and residence of any living person who saw you make that picture?

A. I cannot.

158. X Q. (d. b.) How do you make stereoscopic pictures, using two lenses?

(Objected to as immaterial.)

A. By using a box arranged for holding a plate of the size 4 x 8, or 5 x 8—blocks having two tubes, and exposing the same as in making one picture—when the print is made from the negative it is cut into, and then transposed and mounted on the card.

And being further examined by Mr. Blake, says:

159. Re-D. Q. I wish to call your attention to your answer to Q. 8. You had stated in answer to Q. 5, that in 1845, you had made a box provided with a slide on which the lens was mounted, and that you took two pictures by moving the lens across the plate, as illustrated in Exhibit Irving 1. In Q. 8, you were asked: "Did you ever make any other camera with this sliding lens-holder?" To which you replied

"No." In your affidavit you state that in the early part of 1846, at Troy, you made and used another camera-box with a sliding lens. Which of these statements is correct?

A. The affidavit is correct.

160. Re-D. Q. How came you to make the answer to Q. 8, which you did?

A. I must have misunderstood the question. The box was made in 1846, for Mr. Thomas A. Ayres, while under instruction from me in Morris place, Congress street, Troy. I understood Mr. Ayres was drowned in passing from San Francisco to San Diego, some four or five years after he went to California. I think he went to California in 1847.

161. Re-D. Q. In Q. 24, you say that Mr. Lawyer, Mr. Anson, and yourself, were employed as operators part of the time. Mr. Charles
419 Meade, a part of the time; Mr. Henry operated some; Mr. McBride
and Mr. Rablen operated some. Who did you mean by Mr. Henry?

A. I meant Mr. Henry W. Meade.

162. Re-D. Q. You were asked in the 151 X Q. whether you could name anybody who saw at Meade's a camera-box like Exhibit No. 3. You mentioned several persons and didn't name Mr. Rablen. Do you know whether Mr. Rablen saw it or not?

A. I think he did.

163. Re-D. Q. You have testified in your cross-examination substantially that you cannot produce any box, picture, or negative which you had at Meade's during your stay there. When you left Meade's did you leave the boxes and other property of the gallery there?

(Objected to as improper in the redirect.)

A. When I left Meade's the picture gallery and the stock was sold to Mr. Sisson, who removed the stock to his own place of business in Broadway. The picture gallery was continued by the firm of Morrison and Schoonmaker. Mr. Morrison left a very short time afterwards and the gallery was continued by Mr. Schoonmaker.

164. Re-D. Q. In your answer to the 154 X Q. you speak of taking a picture of a lady, whose name and residence you can't give. What was the nature of the picture, and how came you to take it?

(Objected to as improper in redirect, especially because the quotation or extract from the answer to the 154 X Q. was not in response to, but a departure from, the question.)

A. A gentleman accompanied by a lady came into the gallery and wished to have four, what we called, four fourths pictures, I think they were so called, for models. After some consultation with Mr. Henry W. Meade, he decided to allow it. I made four pictures in a state of nudity as an aid to the party who intended to make a model. After the large pictures were made, she wished to have some smaller ones. I made the smaller pictures, four on one plate. The method by which they were made I will now try to explain. A hole was
420 cut through the bottom of the box in which these pictures were
made, to allow the plate and plate-holder to pass over an opening one-half the size of the plate; a slide covering one-half of that plate was placed in the holder, exposing one-fourth of that plate, sliding along over the other fourth; we then placed the cap on the camera, shutting out the light; withdrawing the slide, covering the part or parts that had been exposed, lowering the camera slightly so as to bring the figure opposite the opening, exposing another fourth of the

plate, sliding the holder along again, and exposing the remaining quarter, thereby making four pictures on the one plate.

(Answer objected to by complainant's counsel for same reason as question, and because irresponsive and a departure from the question.)

165. Re-D. Q. Do you not mean that these four pictures were taken on a four-quarter plate?

(Objected to as to Re-D. Q. 164.)

A. No, sir.

166. Re-D. Q. How large was the plate?

(Same objection as to 164 Re-D. Q.)

A. The plate was what we called a quarter size—three and a quarter by four and a quarter.

167. Re-D. Q. When was that picture taken?

(Same objection.)

A. To the best of recollection in the latter part of 1848.

And being further cross-examined by Mr. ABBOTT, says:

168. X X Q. (de bene). What became of the negatives of these pictures?

A. They were not negatives, they were daguerreotypes.

169. X X Q. (D. B.) Did you preserve any?

421 A. They were taken away by the lady and gentleman. One of each size I afterwards saw in the possession of Henry W. Meade. I wish to make a correction to my answer to Re-D. Q. 164, that is, in relation to cutting the hole. An inference might be drawn that the opening in the bottom of the box might be made at that time. This box had the opening cut as per Exhibit Irving, 3, a short time previous.

(Objected to by complainant's counsel same as the answer referred to.)

170. X X Q. (D. B.) What became of that box?

A. I don't know.

171. X X Q. (D. B.) Was it at the gallery of Meade Brothers, when the sale was made as before spoken of?

A. That I don't know.

172. X X Q. At the time of that sale was there a similar box, or were there similar boxes with such holes cut in them?

A. I don't know.

JAMES IRVING.

Subscribed and sworn to the 11th day of January, 1876.

E. G. THOMPSON, *Examiner.*

WILLIAM RABLEN, a witness produced on the part of the defendants, being first duly sworn, in answer to interrogatories propounded by Mr. BLAKE, says:

1. Q. What is your name, age, residence, and occupation?

A. William Rablen. I am 44 years of age. I reside at No. 218 Grant street, Williamsburgh. I am a photographist.

2. Q. Were you ever in the employ of Meade Brothers, in Albany; and, if yea, when first, and how long?

A. I went with them in 1845 or 1846, I think, and was with them till 1849.

3. Q. While there did you take two pictures successively on the same plate, without removing the plate-holder from the camera? If yea, please describe how you did it, and the apparatus used by you for that purpose.

422 A. I did. It is similar to this, which I made from memory—whether this portion was metal or wood I can't remember. I know that the cleats were wood, but whether the diaphragm was metal or not I don't remember. I refer to the exhibit in my hands.

(The exhibit is produced and marked Exhibit Rablen 1, E. G. T., ex'r.)

4. Q. Please explain how you took pictures with Exhibit Rablen 1.

A. I take a plate-holder with a coated plate. I shoved that plate-holder so as to expose one-half of the plate opposite to the opening; then after exposing that picture, I shoved the plate along and exposed the other half.

5. Q. How frequently during the the time you were with Meade did you take pictures in the way you have described?

A. I can't say how many I took; I can say the camera was worked a couple of months. I wasn't operating all the time, of course.

6. Q. While at Meade's did you know Mr. Irving?

A. Yes, sir.

7. Q. What was his business there?

A. He was foreman of the establishment. We called him the "boss."

8. Q. During your stay with Meade, do you remember any one else who was there as operator or otherwise?

A. Yes, sir; there was Henry McBride, who was an operator; Charles Meade, Henry W. Meade, old Mr. Meade, Mr. Irving operated, Mr. Anson operated, I operated, G. Sherman Huff was the first operator there, Mr. Papke operated; these are all the operators I recollect. Then there was John Hallenbeck, who worked there at that time, and a Miss Clarkson, afterwards Mrs. Campbell. There was also a Mr. Peters, John B., I think, who was employed in the stock-room.

9. Q. Did you or any of these operate the apparatus you have described, for taking two pictures on the same plate without removing the plate-holder from the camera; if yea, who?

423 A. Yes, sir, Mr. James Young; he learned me how to do it.

10. Q. Did you ever order an apparatus like Exhibit Rablen, 1 from anybody? If yea, when, and of whom?

A. I don't recollect ordering one.

And being cross-examined by Mr. ABBOTT, says:

11. X Q. When were you 44 years old?

A. On the fourth day of last December.

12. X Q. How long have you resided in Williamsburgh?

A. About 8 years this time. I have resided there off and on about 20 years.

13. X Q. How long have you been a photographist?

A. Since 1845 or 1846.

14. X Q. When you left Meade Brothers, to what place did you go?

A. I went, in 1849, into business for myself, at Stillwater, Saratoga County.

15. X Q. Did you have a gallery there for photographic business?

A. We were daguerreotyping at that time. I used a ball-room for the purpose. I was traveling through the country.

16. X Q. When did you first see, at Meade Brothers, the apparatus with which you say you took two pictures on one plate?

A. I think it was in the forepart of 1848. It was either in 1847 or 1848.

17. X Q. Have you any memorandum, or means of stating with certainty, when you first saw it there?

A. I am confident the pictures were made before the great fire in Albany, which was in August, 1848—that is the only memorandum I have.

18. X Q. When did you last see that apparatus?

A. I don't recollect what became of the apparatus.

19. X Q. (Question repeated.)

A. About the time I was operating it in 1848, we had it there a couple of months. I did not operate on it every day.

20. X Q. Have you any means of stating that it was there a couple of months, or no longer than a couple of months?

424 A. No, sir.

21. X Q. Did you ever see any other apparatus substantially like that at any time?

A. I have seen sliding boxes since.

22. X Q. Since you have been engaged in business for yourself, have you used cameras with plate-holders with which you could take more than one picture upon the same plate without removing it and the plate-holder from the camera?

A. No, sir.

23. X Q. You have never used, then, any such apparatus since you left Meade Brothers as that with which you say you there made two pictures on the same plate?

A. I have for other persons used an apparatus similar for taking two pictures on the same plate. I worked for a great many people since leaving Meade Brothers.

24. X Q. For what parties have you used such apparatus, and when and where?

A. I used a camera for taking two pictures on a plate at Troxell's, Fulton street, Brooklyn, about six years ago. For Mr. Douglass, Fulton street, corner of Myrtle avenue, Brooklyn, three years ago. For Mr. Silva, Fulton street, New York, two years ago about. That is all I remember at present.

25. X Q. After leaving Meade Brothers, when and where did you first see any such apparatus?

A. I am not sure, but I think the first one was in Boston, about the time ambrotyping was invented. I think it was about 1855, 1856, when I was working for Mr. Irving. I think it was about 1856.

26. X Q. Can you state where in Boston, or describe the place, or give the name of the man, or describe him, where you saw such apparatus?

A. I don't know the name of a street in Boston. I was there but once; it was in a daguerreotype-room; that is all I know. I don't recollect the name of the man. He was a man about 5 feet 11 inches—would weigh, I should judge, about 175 pounds. I should judge his age about 45 at that time. The gentleman resided in Brooklyn two
years ago. I don't know whether he does now or not. He re-
425 sided in Lafayette avenue, towards Fort Green, north of Fulton.
He lived on the next block to Mr. Troxell's.

27. X Q. The apparatus you have spoken of was used in Meade's gallery, I suppose, was it not?

A. Yes, sir; Exhibit Rablen, No. 1, was.

23. X Q. Used openly, I suppose, not secreted—placed where any one going into the gallery could readily see it?

A. When we were making pictures, certainly.

29. X Q. And when you were not making pictures, it was where it could readily be seen by persons in the gallery; was it not?

A. It was like every other camera ready for use; I think that Mr.

Irving had that in the stock-room after we had finished using it, but I am not positive.

30. X Q. Can you safely state as a matter of fact that Mr. Irving had that in the stock-room at all?

A. Yes, sir. He had it in the stock-room some time.

31. X Q. When did you ever see that apparatus in the stock-room?

A. In 1848—that is the nearest I come to it.

32. X Q. More than once?

A. Yes, sir. I have taken it out of there more than once.

33. X Q. When in the stock-room, was it where persons coming into the stock-room could readily see it?

A. I think it was. I think it was under Mr. Irving's desk, where it was perfectly plain. The desk was a four-legged thing, with nothing to block it in—nothing to obstruct the view.

34. X Q. Can you produce any picture or tell me where I can find any picture you ever made with that apparatus?

A. No, sir; I cannot.

35. X Q. Can you give the name of any person whose picture you took with that apparatus?

A. It is so long ago, I can't recollect. I think I made a picture of Mr. Houghtaling, one of the pupils, though I am not certain.

36. X Q. What is that man's Christian name, and where does he reside?

426 A. Anson Houghtaling. He resided in the neighborhood of Albany, I think, Schoharie County.

37. X Q. When and where did you make Exhibit Rablen No. 1?

A. I made that last Sunday evening at my house.

38. X Q. You had seen Mr. Irving before, and talked over this matter with him, had you not, and within a few weeks past?

A. Yes, sir; the day we came up here and made the affidavits.

39. X Q. How was the length of the apparatus of which Rablen No. 1, you call the model, as compared with the length of the plate-holder which was used with it?

A. I should judge the plate-holder was about four and one-half inches long, and I should think the diaphragm was about seven inches—the size of this—then that would allow the holder to be shoved, so that we could make two sittings (pictures) without any light striking the plate.

40. X Q. For what purpose or use were pictures taken with that apparatus?

A. I believe the pictures I made with it were for lockets. We made two on the plate, and ran the risk of selling the next one for a sixteenth plate, or for that matter we could cut it to a ninth case—we could use either.

41. X Q. Please give me the name and present residence of Mr. Anson, named in your 8th answer?

A. I believe Mr. Anson is dead, I am not sure. He used to keep on Broadway, New York; I don't remember his Christian name.

42. X Q. Where does Mr. Huff, named in that answer, reside?

A. I have not seen Mr. Huff since 1846. I don't know what has become of him.

43. X Q. Give the full name and residence of Papke, named in the same answer.

A. Papke went to Germany in about 1848. I don't remember his Christian name.

44. X Q. Where is Mr. Peters?

A. Mr. Peters went to Europe with Henry W. Meade in 1847, I think. I don't know where he is now.

427 And being further examined by Mr. Blake, says:

45. Re-D. Q. How was the frame or diaphragm, like Exhibit Rablen No. 1, attached to the camera?

A. I think it was tacked on the back of the box; it might have been hooked.

46. Re-D. Q. How was the portion of the plate situated with reference to the center of the lens when it was exposed?

A. The diaphragm was put exactly in the center of the lens so as to get a direct focus.

J. H. RABLEN.

Subscribed and sworn to the 11th January, 1876.

E. G. THOMPSON, *Examiner.*

Adj'd to Jan'y 12, 1876—11 a. m.

New York, *Jan.* 12, 1876—11 a. m.

Met pursuant to adjournment.
Present, counsel as before.

James Irving, being recalled by the complainant, in answer to interrogatories propounded by Mr. Abbott, says:

1. Q. You have testified that the box you made in 1846 was for Mr. Thomas A. Ayres; that the box you made in 1847, after returning from Europe, in West Troy, you sold to Mr. Virgil J. Davids; you have also sworn that during the year 1845, in the village of West Troy, New York, you made two pictures on one plate by the use of a sliding lens, the camera-box being divided through the middle by a partition, which partition divided the plate in two nearly equal portions. What became of this box you say you used in 1845?

A. A Mr. Johnson had the first box; he took it away with him.

2. Q. Give Mr. Johnson's full name and present address.

428 A. I think his Christian name was James; that I cannot be positive about; I don't know his present address.

3. Q. Did you ever know his address?

A. I knew him by the name of Johnson.

(Objected to as irresponsive.)

4. Q. (Question repeated.)

A. I did not.

5. Q. Where did you last see this man you call Johnson?

A. In West Troy.

6. Q. When?

A. In 1845?

7. Q. What was his business then?

A. I don't know.

8. Q. Was he a member of any firm?

A. Not that I am aware of.

9. Q. Have you ever heard of him since?

A. I have not.

10. Q. Where was his business then?

A. I did not know the man until he came into my room.

(Objected to by complainant's counsel as irresponsive.)

11. Q. (Question repeated.)

A. I don't know that he had any business. I did not know the man until he came into my room and expressed a wish to acquire a knowledge of the daguerreotype business. I made an arrangement with him to impart to him what knowledge I had of the business for a stipulated sum.

(All but the words "I don't know that he had any business" objected to by complainant's counsel as irresponsive and as a persistent attempt on the part of the witness to interpose irresponsive matter after caution.)

12. Q. Who ever saw you use that box?

A. Mr. Richard Lobdell, of West Troy.

13. Q. When?

429 A. In 1845.

14. Q. More than once?

A. That I don't know.

15. Q. Do you know of his seeing you use it more than once?

A. Mr. Lobdell was in the habit of frequenting my rooms.

(Objected to as irresponsive.)

16. Q. (Question repeated.)

A. As I said before, I didn't know. You had better call upon Mr. Lobdell, and he can answer that question for himself.

(The words after "know" objected to by complainant's counsel as irresponsive after caution to the witness.)

17. Q. In what month was it that you say Mr. Lobdell saw you use it?

A. I cannot state positively as to the exact date without referring to my memoranda.

18. Q. What memoranda?

A. A copy of an advertisement in the West Troy Advocate, published by Mr. Holland, would not fix the precise date, but within two or three months, as it was during that time I was making daguerreotypes in West Troy.

19. Q. By referring to the copy of that advertisement are you able to fix the time when, as you say, Mr. Lobdell saw you use the camera-box, within 2 or 3 months?

A. I am able to say that it was during the time I was in West Troy.

20. Q. (Question repeated.)

A. Yes.

21. Q. Do you fix it by the date of the advertisement?

A. By the date of the advertisement, and also by memory.

22. Q. What is the date of the advertisement?

A. Seventeenth of September, 1845.

430 23. Q. And was it within two or three months of that date that you mean to say that Mr. Lobdell saw you use that camera-box?

A. I think it was during that time that he saw me use the box; what makes me remember the circumstance more particularly was his scolding me severely for having set him so long. When he saw the two pictures he appeared to be quite elated; one of those pictures he had put into a locket, and the other in a case.

(All after the word "box" objected to as irresponsive by complainant's counsel.)

24. Q. Did you make any other picture or pictures of Mr. Lobdell?

A. I have. Mr. Lobdell was one of my liberal patrons while there. He used to bring in his friends and relatives to have pictures made.

(All after "I have" objected to by complainant's counsel as irresponsive.)

25. Q. Was this occasion within two or three months of September 17th, 1845, when you say Mr. Lobdell saw you use the camera-box, the same which you have referred to previously in this examination and also in your affidavit made in the case?

A. I think it was.

26. Q. Did any one, also, ever see you use this camera-box in 1845?

A. They did. A Mrs. Ebenezer Wiswall, and others whom I do not think of.

27. Q. Do you know, or did you ever know, Mrs. Ebenezer Wiswall's address?

(Objected to as incompetent at this stage of the examination by defendants' counsel; and he gives notice of a motion to strike out.)

A. I did. Mrs. Wiswall is now dead.

28. Q. Was there any other person who saw you use that box?

(Same objection and motion.)

A. I don't remember now.

JAMES IRVING.

Sworn and subscribed to before me this 12th day of January, 1876.

E. G. THOMPSON.

431 JAMES HINDS, a witness produced on the part of the defendants, being first duly sworn, in answer to interrogatories propounded by Mr. BLAKE, says:

1. Q. What is your name, age, residence, and occupation?

A. James Hinds. I am 74 years of age. I reside in Schenectady, New York. I am now refining silver for photographers, and their gold waste.

2. Q. Were you ever at Meade Bros., of Albany; and, if yea, when, and how long?

A. In the summer of 1848 I was there, and learned the art of daguerreotyping. I was there in the neighborhood of six weeks.

3. Q. While you were there did you see any device for taking two pictures on the same plate without removing the plate from the camera?

(Objected to as immaterial.)

A. I did.

4. Q. Please describe it, and if you see any model here please produce it.

(Same objection.)

A. Here is the thing that was described to me. I refer to the model Exhibit Rablen No. 1.

5. Q. Who showed it to you, if anybody?

(Same objection.)

A. Mr. Irving.

And being cross-examined by Mr. ABBOTT, says:

6. X Q. Where in Schenectady do you live?

A. No. 68 Fonda street.

7. X Q. How long have you lived there?

A. Since the 1st of last May.

8. X Q. Where did you live next before that?

A. I lived on what is called College Row.

9. X Q. For how long?

A. I lived there one year.

10. X Q. Before that where did you live?

432 A. No. 1 White street, corner Liberty.

11. X Q. How long did you live there?

A. Three years.

12. X Q. Next before that where did you live?

A. I lived on what is called Front street; the number I can't give you.

13. X Q. How long did you live there?

A. One year.

14. X Q. Next before that where did you live?

A. I lived on White street, about No. 34.

15. X Q. For how long?

A. In the neighborhood of six months.

16. X Q. Next before that where did you live?

A. On Veeder's avenue.

17. X Q. For how long?

A. I think I was there about two and a half years.

18. X Q. Next before that where did you live?

A. 17 Smith street.

19. X Q. For how long?

A. I must have been there about five years.

20. X Q. Next before that where did you live?

A. On Ferry street.

21. X Q. For how long?

A. About 2 years.

22. X Q. Next before that where did you live?

A. On what is called North street.

23. X Q. For how long?

A. I lived there about a year.

24. X Q. Next before that where did you live?

A. I boarded at a hotel before that.

25. X Q. What hotel, and where?

A. It was called the Knickerbocker, on Washington avenue.

26. X Q. How long were you there?

A. In the neighborhood of 2 years.

27. X Q. Next before that where did you live?

A. My family was living at what is called the Little Falls.

28 X Q. Where did you then live?

433 A. I made it my home there, but I made pictures that season at Sharon Springs. I was always back and forth.

29. X Q. Next before that where did you live?

A. At Terre Haute, Indiana.

30. X Q. Were you making pictures at Sharon Springs all the time while your family lived at Little Falls?

A. Not all the while. I opened a gallery at Cannochaharie—that was for the winter months—while they still lived there; that is, after leaving Sharon Springs.

31. X Q. All the time while your family lived at Little Falls were you taking pictures either at Sharon Springs or at Cannochaharie?

A. I left them there yet when I opened a room at Schenectady.

32. X Q. During all the time while your family were at Little Falls were you engaged in taking pictures either at Sharon Springs, Cannochaharie, or Schenectady?

A. Yes.

33. X Q. How long did you live at Terre Haute?

A. A little over three years; between three and four.

34. X Q. Where did you live before that?

A. Syracuse.

35. X Q. Where in Syracuse?

A. I lived on Railroad street. I boarded some of the time while in Syracuse, and some of the time we kept house.

36. X Q. Where did you board in Syracuse?

A. I boarded at two or three different places in Syracuse. I boarded with a man by the name of Ames, and at another house—I forget the name—it was not a great ways from there. And I boarded at a hotel called Scott's Hotel, at Salina, about a mile from where my place was.

37. X Q. During this time what was your business?

A. Daguerreotyping.

38. X Q. Where did you live before that?

A. I lived in Otsego.

39. X Q. How long did you live in Syracuse?

A. Between three and four years.

40. X Q. How long did you live at Otsego?

434 A. I was born there, and lived there till I was twenty-seven or twenty-eight years old, and then lived 12 years at Fort Plain, New York, in Montgomery County, where I got injured by a fall from a horse, and I moved back to Otsego, and lived there three or four years, I should think; from there I went to Meade Brothers and learnt the art of daguerreotyping.

41. X Q. How old where you when you went to Meade Brothers?

A. Forty-seven.

42. X Q. How long have you carried on your present business?

A. About a year I have made it a permanent business.

43. X Q. What did you do before that?

A. I was making photographs, and I refined some jobs of silver and gold waste which were sent in to me.

44. X Q. For how long was this your business?

A. About twenty-eight years.

45. X Q. During that time was photographing your principal business?

A. Yes.

46. X Q. Before that what did you do?

A. I carried on a cabinet and chair business, and also manufactured a few carriages; and I carried on the same business at Otsego at the same time.

47. X Q. Were you ever in any other business?

A. When I was at Terre Haute I was a partner in a mercantile business.

48. X Q. Of what mercantile business?

A. Dry goods, notions, cutlery, and so forth; we had three establishments, my partner and I; two retail and one wholesale; we also retailed some from the wholesale establishment.

49. X Q. This device, which you say Mr. Irving showed you while at Meade Brothers; did he show it to you more than once?

A. I don't think he did.

50. X Q. When was that?

A. That was in the summer of 1848.

51. X Q. Can you tell the month?

A. I went there in July and left in August, and I think it was shown to me just as I was leaving.

435 52. X Q. Was any one present when he showed it to you?

A. That I couldn't say.

53. X Q. Did Irving describe the device?

A. He did.

54. X Q. Gratuitously?

A. He charged me nothing for it; I paid them, I think, fifty dollars to teach me all they knew, and this came under that head.

55. X Q. Did he illustrate the device practically?

A. He illustrated it so that I understood the principle.

56. X Q. Did he make any pictures with it in your presence?

A. I have no recollection. This was done just as I was leaving; he may have done so.

57. X Q. During the six weeks you were there, were you pretty constantly in the rooms of Meade Brothers during the hours when pictures were made?

A. I was.

58. X Q. And pretty constantly observing, during that time, the different methods by which pictures were there made?

A. I was.

59. X Q. From your occupation, would you not have been quite sure to see this device, which you say Irving described, if it had been in use there?

A. If it had been in use there at that time I think I should have seen it.

60. X Q. Describe what Mr. Irving showed you, without the use of the model, as it now remains in your memory, unaided by the information or statements or recollection of any other person?

A. He showed me—I think it was a cover of a box, both ends cut off, with an aperture cut in the centre, and by doubling the bottom up, and the top down to hold the holder; then, by taking the holder and sliding it in the end till you had fetched the center of half of the size of the plate to the center of the aperture cut in the cover, and then exposing the plate from there, and then shutting off the light from the plate, and then moving that holder along till it come to
436 the center of the other half of the plate; then exposing of it,
that made the two images on the same plate and finished the pictures, except drawing them over the mercury. This first opening was half the size of the plate on which we wished to take the image.

61. X Q. That is exactly what he showed you?

A. Yes, sir.

62. X Q. Where was it that he showed you that?

A. In Meade's gallery, in Albany.

63. X Q. In describing it, did he do or say anything more than you have said?

A He gave me no further description of it than to get the two images, except to attach it to the box.

64. X Q. Did he attach it to the box?

A. I didn't see him.

65. X Q. Was this a pasteboard box-cover?

A. It was a common, longish, pasteboard box-cover; might have been a foot long; was narrow—something like an envelope box-cover.

66. X Q. Did Irving show you any pictures which he had made with such a device?

A. I don't recollect of seeing any.

67. X Q. Were you at Meade Brothers when the picture of the nude woman was taken?

A. I didn't see anything of the kind.

68. X Q. You were not there at the time?

A. I think they told me they had something of the kind, which was made before I came there.

69. X Q. Did you ever use such a device as Irving described to you?

A. I did.

70. X Q. When did you first use it?

A. I can't say in that year, but I did use it in 1849.

71. X Q. Where?

A. I made some pictures in a little town, called Mackdonough, in Shenango County; that was in 1849.

72. X Q. Where did you get the apparatus with which you made such pictures?

A. I got it of Meade & Brother—a half box, with a half-size tube attached—it was what we term a half-size instrument.

437 73. X Q. That was an ordinary camera-box, half size?

A. Yes. I see something here like it—old-fashioned—where you slide in the pictures from the top.

74. X Q. And with that box at Mackdonough, in 1849, you made more than one picture on the same plate without removing the plate-holder from the camera-box?

A. I did.

75. X Q. How?

A. It was made on what we call a quarter-size plate; by putting that plate into a half-size holder it was put the other way in the holder, but put to the bottom of the half-size plate-holder—a quarter-size plate is 4¼ inch' long, and the width of the half-holder is 4¼ inches, that would reverse it, and fetch it up and down the short way of the half-size holder, that would fetch it up to the extreme left on the bottom of the holder, if we were to put it in from the top. Before putting that into the box I took a card-board and cut the center out to the half of the quarter-size plate—that aperture was cut an inch and a half in width; then slipped into the holder before focusing for the picture; I turned the camera-box on the side before I focused it, and slipped this paper in, and that brought the aperture of the paper lengthways up and down—that would be after the box was turned over. Then I prepared the plate for the holder, and put this quarter-plate into this half-folder, and then put that into the camera-box, and from the center of that plate it would be about an inch and five-eighths; I slipped it three-fourths of an inch below it, that is, farther into the box than the center of the first quarter-plate; that would fetch it to the center of the half of the quarter-plate; then exposed it, shut off the light, and drew it one and a half inch back towards where the plate went in, and then exposed that; that gave us the other half of the plate. That gave me my picture, two on the plate.

77. X Q. What did you draw one and a half inch back?

A. The plate-holder that held the plate.

Adjourned, for recess, a half an hour.

438 After recess:

77. X Q. Previous to the recess your last answer was carefully read over to you once or twice, was it not?

A. I believe it was.

78. X Q. And you pronounced it correct?

A. Yes.

79. X Q. During the recess have you conversed with any one on the subject of your last answer?

A. Not to the point, I don't think we did. Mr. Irving said I made a mistake in placing the plate. I told him no; he gave in, and said I was correct in my answer.

80. X Q. You make the same answer in relation to the next to the last answer taken before recess—the last answer?

A. I make the same answer.

81. X Q. What time in 1849 did you make such pictures?

A. In the summer season; it was somewhere along July or August; it was either one or the other of those two months.

82. X Q. Did you retain the pictures so taken on one plate?

A. I gave it to the one that sat for the picture.

83. X Q. Do you know who that was?

A. I had never seen the man before; they called him Mose. Cummings, when he was introduced.

84. X Q. Did you ever see him afterwards?

A. I saw him every day after that for a week or ten days. I never saw him since.

85. X Q. Do you know where he lives now?

A. I do not.

86. X Q. Do you know where he lived then?

A. They said he lived at Mackdonough, Shenango County, a little place where I was making pictures at the time; I made pictures there, and then left there. That is the only time I made pictures in Mackdonough.

87. X Q. Did you find that a convenient mode of making pictures?

A. I had no difficulty in making those pictures in that way.

88. X Q. That was the first experiment of that sort?

439 A. I think I had tried it before.

89. X Q. When and where?

A. After I returned home, after I had served an apprenticeship at daguerreotyping, I think I tried it at home.

90. X Q. In the same manner?

A. It was the same principle of moving, but I got both images on the same side of the plate, or rather one in the centre and the other on the side of the plate.

91. X Q. How many experiments of this sort did you make before the Mose Cummings picture?

A. I could not say how many, not a great many. The object was to get them correctly on the plate. It was merely experimenting.

92. X Q. Did you retain any of the results of your experiments?

A. I did not.

93. X Q. In making such pictures did you move the camera-box at all?

A. I did not.

94. X Q. After the Mose Cummings picture when did you next make similar pictures?

A. The next one I merely showed the process to a pupil of mine in Syracuse, about a year after—it might have been a year and a half.

95. X Q. Who was that pupil?

A. His name was Sellwood.

96. X Q. His full name and address?

A. Alfred Sellwood, Syracuse.

97. X Q. Is he there now?

A. I saw him there about three years ago. I couldn't tell where he is now.

98. X Q. Was he in business there then?

A. I think he was in the carpentering business; he had given up the photographing business, and went into the carpentering business.

99. X Q. When did you next make pictures in the same manner?

440 A. I think it was in 1858 or 1859—until I came back and commenced making autograph pictures; it may vary a little on the time, but it is not far from 1858 or 1859.

100. X Q. And after that did you make them frequently?

A. Well, I did for a couple of years or so.

101. X Q. And your pictures made at this time, did you make them with a piece of pasteboard, as you have described?

A. I did not.

102. X Q. Where did you get the apparatus with which you made these later pictures?

A. I got it of Parson, of Albany, who kept a stock-room.

103. X Q. Describe the apparatus you bought of him.

A. It was a box with two tubes upon it; the carriage which held the plate-holder was a moving one; the plate-holder was also a moving one; it moved up and also sideways—that is, the plate-holder moved sideways, and the carriage that held the plate-holder, up and down.

104. X Q. How many pictures did you make with this apparatus at one time?

A. Twelve.

105. X Q. What were you doing from 1849, when you took the Mose Cummings picture, down to 1858 or 1859, when you used the apparatus you bought of Mr. Parsons?

(Objected to as having already been answered.)

A. I was in the picture business the most of it, and in the mercantile at Terre Haute, most of the time I was making photographs—daguerreotyping till the photographing came in. While I was in Terre Haute I was making daguerreotypes.

106. X Q. Would it be possible to make 12 pictures on the same plate with the card-board device you have described?

(Objected to as immaterial, and as not being directed to the matter of the direct examination of the witness.)

A. It would.

107. X Q. At whose request did you attend this examination?

441 A. Mr. Irving's.

108. X Q. When did you first see him in relation to coming here?

A. About two weeks ago.

109. X Q. Where?

A. I was on River street, in Troy, and in passing up the street he hollowed at me.

110. X Q. Did he converse with you on the subject of your testimony here?

A. He did on the subject.

111. X Q. How long?

A. We went up into Mr. Schoonmaker's gallery, and sat there perhaps a half an hour.

112. X Q. Any one else present?

A. Not when we went in and took our seats.

113. X Q. During the interview was any one present?

A. Mr. Schoonmaker came in.

114. X. Q. Did he take part in the conversation?

A. It was in his finishing-room—he did not take much of a part; he merely sat there, and if he was asked a question he would answer it.

115. X Q. When did you next see Mr. Irving or any one else in relation to your coming here?

A. About a week ago; Mr. Irving was in our place.

116. X Q. How long an interview did you have with him then?

A. It might have been a couple of hours; he took tea with me.

117. X Q. When did you next see Mr. Irving or any one else in relation to your coming here?

A. The next I saw Mr. Irving was in Mr. Anthony's place on Monday. He wrote me a line, saying that Mr. Anthony wanted me to come down, and enclosed a five-dollar bill in the envelope.

And being further examined by Mr. BLAKE, says:

118. Re-D. Q. I wish to see whether I correctly understand your description of the way in which you took two pictures on one plate, in the town of Mackdonough, in 1849. Do I rightly understand you to say that you put into a box the card-board, having an aperture cut
442 in it in the manner you have described, and turned the box down on the side?

(Objected to as leading, as already sufficiently answered, and on the ground that the counsel does not understand the witness to say that he put the card-board into the box, but that he "slipped" it into the holder, and asks the witness to refer to his previous answer before answering.)

A. I put the card-board in the camera-box, and turned the box on the side.

119. Re-D. Q. Do I rightly understand you to say that you took a half-size plate-holder containing a quarter-size plate and slipped the plate-holder, with this plate in, into the box and took a picture?

(Objected to as leading.)

A. Yes; I put that into the box.

120. Re-D. Q. In which part of the half-size plate-holder was the quarter-size plate?

A. When it laid on the side it was on the left-hand side.

121. Re-D. Q. After you had taken the first picture, I understand that you drew the plate-holder back, and took another picture, do I?

A. I drew it to the right.

122. Re-D. Q. Where was the aperture in the pasteboard with reference to the center of the lens?

A. The aperture was right at the center of the lens.

JAMES HINDS.

Sworn and subscribed to before me this January 12th, 1876.

E. G. THOMPSON, *Examiner.*

HUGH GUYER, a witness produced on the part of the defendants, having been first duly sworn, in answer to interrogatories propounded by Mr. BLAKE, says:

1. Q. What is your name, age, residence, and occupation?

A. Hugh Guyer; I am 54 years of age; I reside in Albany; I am a contractor and a builder.

443 2. Q. What was your business in 1847-'8 and '9, and where did you carry it on?

A. I was a brass-finisher, worker in iron and wooden patterns. It was then No. 88 North Broadway, Albany.

3. Q. During those years did you work on daguerreotype apparatus, and for Meade Brothers?

A. I did.

4. Q. Did you ever make a diaphragm like Exhibit Rablen No. 1; and, if yea, when first?

A. Something like that; it accomplished the same end.

(Objected to by complainant's counsel as irresponsive, and he moves to strike it out.)

It was in 1848; I think it was in August, by referring to my day-book, when the charge was made.

5. Q. Please describe the diaphragm you then made.

A. It was a plate; I don't know whether it was wood or iron, but I labor under the impression that it was sheet-iron with wooden slides and an oblong hole through it.

6. Q. For whom did you make this diaphra'm?

A. Meade and Brothers. I suppose it was for them; they paid me for it and it was charged to them.

7. Q. Did you have a pattern to make it from, and who gave you the pattern?

A. I think it was one of the boys who brought it up from the office of Mr. Meade.

8. Q. About that time did you see two pictures taken on one plate by this apparatus, and what was the subject?

A. I did, after they came from the machine. They attracted my attention at the time; the two pictures were so odd—they were those of a man dressed in a Turkish cap and gown. These were a novelty then to me.

And being cross-examined by Mr. ABBOTT, says:

9. X Q. You say you can't remember whether this diaphragm was wood or iron; are you willing to swear positively that there was not more than one aperture in it?

A. I am willing to swear that there was only one.

444 10. X Q. After the year 1848 when was your attention first recalled to the fact that you had made this diaphragm?

A. Within a week or two of the present time.

11. X Q. Does your book give any description of the article you then made, either by drawing or words?

A. It is entered as double plate-holder.

12. X Q. How many pictures of the man in a Turkish cap did you see?

A. Two pictures on one plate.

13. X Q. Did you see them made?

A. They were just as they came out of the dark-room, from the mercury baths.

14. X Q. That was the first you saw of them?

A. That was the first I saw of them.

15. X Q. Who had them when you first saw them?

A. Mr. James Irving.

16. X Q. What were the positions on the plate of these two pictures, with relation to each other?

A. They were side by side—and both in the same position, with a space between them.

17. X Q. About how much of a space between them?

A. About half an inch, three-quarters, five-eighths; I could not tell exactly; somewhere along there.

18. X Q. Did you ever make another such a diaphragm or plate-holder?

A. I believe I did; one, or something like it.

19. X Q. When, and for whom?

A. I think it went to the same place, Meade Brothers—it was longer than the first one, I think. It was previous to 1849 or about the first of 1849—somewhere about that time, but after I made the other one.

20. X Q. Was the second like the first, with the difference you have named?

A. There was one oblong hole in it—it was a little longer.

21. X Q. Are you sure you made this second one?

A. Pretty certain.

22. X Q. Is that on your book?

A. No, sir; that part of the book is gone; the children have used it up.

445 23. X Q. Did you ever make photographs or daguerreotypes?

A. Never.

24. X Q. Never in that business at all?

A. Never. Nothing more than to make apparatus for operators and dealers.

25. X Q. Did you ever make any other plate-holders similar to this?

A. I don't think I did.

26. X Q. Has this apparatus been described to you by any one within a fortnight?

A. Mr. Irving came to me for information as to dates, and I think he had something like Rablen No. 1, and asked if I had ever seen anything of that kind; I told him I thought I had; I then looked in my book (what there was left of it). I told him yes, I made it for Meade Brothers. He then asked me to give him a date; I told him then it was in 1848. He looked at the minute he had; I think his answer was, that agrees with mine, or something to that effect. I don't know whether I gave him the price or not; the price was fifty cents.

(Counsel for complainants objects to all the answer after the words "to anything of that kind" as irresponsive.)

HUGH GUYER.

Sworn and subscribed to before me this 12th day of January, 1876.

E. G. THOMPSON, *Examiner.*

Adjourned to new notice.

446 Proofs for final hearing on the part of the defendants in rebuttal, taken before E. G. Thompson, one of the standing examiners of the court, under and pursuant to the 67th rule in equity as amended.

447 NEW YORK, *March* 30, 1876—10 a. m.

Prof. HENRY MORTON, being recalled as a witness on the part of the defendants, in answer to interrogatories propounded by counsel for the defendants, says:

Q. 1. Referring to the 32d question and answer, on page 96 of complainants' record, I ask, Have you made a photograph of a background with a lens such as was used at the time when the photograph of the Pratt boy was taken, i. e., in 1845–1846? If so, please produce it, and state how it was made, and what it shows to you as an expert in the art. In answering this question, refer to the statements of Southworth on top part, page 106, complainants' record in rebuttal.

A. The question and answer No. 32 are as follows:

"32. Q. I now put into the case Exhibit No. 22; please state what it is, and by whom made.

"A. It is a photograph of a background, showing the full extent of the field of the lens, made by myself."

The statement of Southworth is as follows:

"Much departure from the axis of the lens elongates or distorts; and also the light diminishes, so that it is soon lost in a penumbra or shadow."

I have prepared, and now put in the case as Exhibit Morton No. 8, a photograph made by me of a background, consisting of a sheet of white paper, on which were ruled a system of vertical and horizontal lines, respectively, parallel.

This was taken with an ordinary portrait combination, made long ago, probably quite as early as the date mentioned, although I do not know its precise date of manufacture, but its structure is exactly that of the earliest photographic lenses. From an examination of this picture, which shows effectively the entire field of the lens, it will be seen that there is no appreciable distortion until we come within about three-eighths of an inch of the extreme edge of the field; here
448 the first appreciable distortion is seen. No penumbra or fading off of the light is perceptible until we come within about an eighth of an inch of the extreme edge of the field, when the light falls off suddenly, passing off into absolute darkness within this narrow limit of the eighth of an inch. From this I judge that no appreciable distortion would be produced by such a lens by using a part of its field even at a considerable distance from the centre or axis, but that it might be used up to within a half inch of its margin without any distortion which would be appreciable under the most favorable circumstances for recognizing such an action, such as the copying of sharply-defined black lines as in Exhibit Morton No. 8.

Moreover, it will be observed that such distortion as does exist on the extreme edge does not, as stated by Southworth in the answer quoted above, elongate, but, on the contrary, contracts the size of the squares, producing a reduction—which is just about equal in the extreme case of a square whose corner touches the very limit of the field, as compared with the square at the centre—of about one-half a millimetre or one fifty-second of an inch ($\frac{1}{52}$ in.). If we take the measurement of the square next to this, and compare it with a square at the centre, the difference will not be found to be greater than the thickness of one of these fine lines on the photograph. These measurements show how insignificant is the distortion, as well as that it is in the opposite direction to that asserted by Southworth.

Referring to Exhibit 22, to which the answer No. 32 refers, I should say that it does not truly represent the field of photographic lens, such as was used at the date mentioned. There is on this exhibit a circle, 4$\frac{3}{4}$ inches in diameter, scratched with some sharp instrument, concentric with the field of the lens, which would convey the impression that this circle represented the limits of said field, whereas it is evident that the limits of the said field, as I should judge from
449 the photograph itself, was fully one-quarter (¼) of an inch inside of that line, because the print is fully as dark there as anywhere outside, and of course the field of a lens comprises the area on which light actually falls, and not some indefinite, unilluminated area beyond this.

(Photograph of background referred to in the preceding answer marked Defendants' Exhibit Morton No. 8, E. G. T., ex'r.)

Q. 2. Referring to the 44th question and answer of Wing, on page 98 of complainants' evidence in rebuttal, please state whether you find anything in the specifications of Southworth which directs "that the centre of each picture would be in the axial centre directly back of the centre of the lens," and if you find such directions please quote them.

(Objected to as incompetent and inadmissible at this stage of the case.)

A. In reading over the patent I find the following statement:

"In taking daguerreotypes, photographs, etc., it has been customary to use a separate plate for each impression, the plate being removed from the camera and replaced by another; where several impressions of the same object were to be taken, as in multiplying copies, or for the purpose of selecting the best-timed picture, this caused considerable delay and trouble, to obviate which is the object of my present invention, which consists in bringing successively different portions of the same plate or several smaller plates, secured in one plate-holder, into the field of the lens of a camera."

There seems to me here a conspicuous omission of any reference to the centre of the object, lens, or field, or their mutual relations, nor do I find this omission supplied by any other statement in the patent, but, on the contrary, I find the following: "Or lastly, stereoscopic pictures may be thus taken with a suitably-arranged camera."

450 Now, the production of stereoscopic pictures, not only according to my own judgment, but according to the testimony of complainants' witnesses, would not involve, as a matter of necessity, that all the pictures so taken on one plate would have "the centre of each picture in the axial centre directly back of the centre of the lens."

Furthermore, I find in the same patent as follows:

"It is evident that my improvement may be embodied by causing the lens of the camera to be made adjustable in different positions with respect to the plate, while the plate remains stationary, so that different portions of the plate may be brought into the field of the lens. This I have tried, but do not consider it practically so good a plan as the foregoing, as it necessitates a change of position of the camera itself or of the object."

The construction of the above might seem doubtful without some further explanation, which, however, I find given by the patentee in answer to X Qs. 23 and 24, page 57, complainants' printed record: "I do not move the camera when I move the lens usually, and do find that for some kinds of work moving the lens is better than moving the plate and frame."

And X Q. 24: "When you move the lens and do not move the camera, do you move the object?

"A. I do not, except in copying."

In the light of this explanation it seems to me that the patent here describes a plan in which, beyond question, the centre of each picture would not be "in the axial centre directly back of the centre of the lens."

In conclusion, therefore, I would say that not only do I not find such direction as you have mentioned in the patent, but on the contrary, two statements directly contrary to and inconsistent with that made in answer to Q. 44, quoted by you.

451 (Answer objected to by complainants' counsel for reasons given in objecting to the question, and for the following additional reasons:

First. The defendants having long since closed their testimony and the complainants having closed their testimony in rebuttal, this answer is inadmissible.

Second. Much of the answer is a plain departure from the question, and irresponsive.

Third. Instead of being an answer to the question, much of it is an interjected argument.

Fourth. It purports to give a construction to the language of the patent which is solely within the province of the court, and if otherwise, could be given only by a proved expert in such matters, and at an early stage of taking testimony.)

Q. 3. Referring to the testimony of George McKown, page 93, defendants' printed record, and the answers of Wing, when recalled, to questions 67, 68, 69, and 70, pages 101 and 102, complainants' evidence in rebuttal, please describe what you understand McKown's apparatus to have been, and whether it would have been possible, using such an apparatus, to take two pictures on the same plate so that each picture should be visible and distinct from the other.

(Objected to for the same reasons as to the second and the first objections to the last answer, and for the further reason that defendants have already introduced testimony on this subject as appears in their printed record at folios 466–469, and should not be allowed after complainants, testimony in rebuttal to introduce cumulative testimony, and complainants will claim to have this stricken out.)

A. As I understood the description given by George McKown, it would be perfectly possible to make successfully two pictures on the same plate so that each would be visible and distinct from the other.

452 In his answer to question 2, page 93, he very clearly describes a plate-holder and two slides whose structure may be made perfectly evident by reference to the drawing which I will introduce as Exhibit Morton No. 9. The plate-holder is represented in Fig. 1 by the rectangular A B. This contained two slides, one with an aperture, C D, about half the size of the plate, on which the picture was taken. This slide, separately, is shown in Fig. 2, C^1 D^1 being the aperture referred to. The other slide was exactly like this, but without an aperture, and therefore when pushed in all the way covered the entire plate. The plate-holder having been inserted in the camera-box far enough to receive an image on the end of the plate, as stated by McKown in answer to question 7, both slides were drawn half way, the position of the slides and plate-holder being then such as is represented in Fig. 3; the slide with the hole in it, and the slide without any hole, being both in similar position, one behind the other, as indicated at G H, thus leaving the end, E F, of the sensitive plate exposed opposite to a portion of the field of the lens. It would, therefore, receive the image of any object so placed as to occupy this portion of the field. When this picture had been taken, both slides were pushed in, and the plate-holder so closed was then pushed further into the camera-box, so that the portion or half of the plate under C D, Fig. 1, would occupy the position before held by E F, Fig. 3, when the plate-holder was only inserted partially into the camera-box. On then drawing out the slide without an aperture, the plate-holder, plate, and slide with an aperture were left in the condition shown in Fig. 1, and the portion of the plate C D would now occupy exactly the same portion of the field of the lens which had been occupied by the other end of the plate before. The image, therefore, which had been received and photographed on the other end of the plate would now be reproduced on this end.

In reference to the answers 65, 66, etc., I should remark that these are all founded upon the assumption that the apparatus Exhibit 453 No. 46, prepared by Mr. Wing, was identical with or equivalent to that used by Mr. McKown. On examining this, however, I find that, in the first place, the aperture to receive the plate-holder is at the top of the box in place of being at the side.

In the second place, I find that the slide with an aperture, instead of having that aperture so placed as to correspond with one end of the plate, as is evidently involved in the description given by McKown in his answer to question 2, this aperture is in the middle of the plate; consequently, when after the exposure of one end of the plate by drawing both slides half way this slide was pushed in and the slide without an aperture was entirely withdrawn, instead of "exposing the other end of the plate," as described by McKown, Mr. Wing here exposed the centre of the plate, so having in the exposed field a portion of that end of the plate which had been already exposed, and shutting off and rendering unavailable a portion of that end of the plate which should have been exposed at this time. This, therefore, I regard as essentially different from the apparatus described by McKown, and its use in this way ensuring a failure of the experiment; whereas had his description been followed in the manner I have already explained, two perfectly good pictures could have been produced.

The facility of making all the necessary adjustments, both of the slides and of the camera, in reference to the sitter, would of course be greater with small pictures, such as were used for lockets and the like, than with large ones, especially if the area of the picture were limited by a diaphragm inserted in the box between the plate-holder and the lens, and near the plate-holder.

(Drawing referred to offered in evidence and marked Defendants' Exhibit Morton No. 9, E. G. T. ex'r.

Complainants' counsel objects to all that part of the foregoing 454 answer after the words "In reference to the answers 65, etc.," because not responsive to the question, and because of the same objections stated to the last question.)

Q. 4. Will you please add to your drawing Exhibit Morton 9 the skeleton of the camera-box?

A. I do so by the irregular or dotted line A K, B N in Fig. 1, and A K, B H in Fig. 3, the position of the lens being indicated by circles M M'.

Q. 5. Can you say, from an examination of Complainants' Exhibit 47, whether or not two good pictures could have been taken with the apparatus used, had the aperture in the shield or slide been in the right place?

(Objected to as above, and because it does not appear that this is a competent witness to answer such an enquiry.)

A. I can, for the following reasons: The pictures there seen are well defined and in all respects satisfactory, with the exception that one overlaps the other by about one-half. Had the proper slide with the opening located as represented in my drawing Exhibit Morton 9, and as described in McKown's testimony, been used, this overlapping would not have occurred, and both pictures would then have been perfect.

(All after the word "can" objected to by complainants' counsel as irresponsive, incompetent, and inadmissible.)

Q. 6. Have you read and do you understand the testimony of Southworth, complainants' evidence in rebuttal, pages 107 and 108, interrogatories 9 to 13 inclusive? Do you agree with the conclusion at which he arrives in his answers to these questions. And, if not, please give your reasons in full.

(Objected for same reasons as to question 5 and to question and answer 2.)

A. I have read the testimony referred to, and have carefully examined the exhibit connected therewith. I have made a number of experiments bearing thereupon, and, as a result of these, have
455 come to conclusions entirely different, and, indeed, radically opposed to those stated by Mr. Southworth. To explain my conclusions and the reasoning upon which they are founded, it will be necessary for me to state in the first place certain well-known facts in relation to the production of what is commonly known as stereoscopic effect.

As every one knows, stereoscopic effect is that appearance of solidity which an actual object in relief presents to one who possesses distinct vision, or moderately distinct vision, with both eyes, and results from the fact that the two images given by the two eyes slightly differ from each other, each eye seeing a little more on its own side of the solid object, or seeing a near object projected upon a slightly different part of more distant ones, and the like effects, resulting from the slight difference in position of the two eyes, one being to the right and the other to the left. To imitate this effect by the use of pictures on a flat surface it is necessary that, in the first place, we should present to each eye a different picture, the difference being of the same nature as that I have already described as characterizing the two images of a solid object as seen by the two eyes; and, secondly, that by some optical contrivance these two pictures should be made to appear to the respective eyes as located in the same place, as would be the case with the images of the solid object viewed directly by the two eyes. This last condition is met by the stereoscope in any of its forms; that most commonly used being the lenticular stereoscope, in which two lenticular prisms bend the rays of light coming from the two pictures, so that they enter the respective eyes as though they came not from the two pictures at either side but from a common area intermediate between the two pictures. The first condition is fulfilled by having two pictures differing from each other just as the two images of the same object seen by the two eyes would differ; that is, one showing what
456 may be called a right-eye view, the other other a left-eye view.

Under these circumstances we shall have all the conditions of natural stereoscopic visions fulfilled, each eye will see its appropriate image, and both will seem to come from the same location in space as though a single solid object were there present. In the preparation of such pictures considerable latitude is allowable in certain respects. The two pictures may be taken from points considerably further apart than the two eyes, in which case either the relief will appear exaggerated or the object will seem unnaturally small, as it would be if our eyes at their natural distance saw so much to the right and left of it, as it were. One condition is, however, essential, as common sense as well as experiment teaches us, viz, that the pictures should be essentially right-eye and left-eye pictures; that is, in being views taken from points to the right and left relatively of the object depicted. It is evident, however, that to take such views to the right and left respectively of a single object, such as a human figure, or to take the two views from the same point, but turning or rotating the figure to the left and right, would produce precisely the same effect. Thus, if a camera were placed opposite a sitter, one picture taken and then the sitter remaining absolutely still, the camera were moved three or four inches to the left or right and another picture taken, these two pictures, when properly mounted and viewed through a stereoscope, would unquestionably produce a stereoscopic effect. Of course, the same result substantially would be produced if two lenses, at a distance of about three to four inches from each other, were attached to the front of the same camera and both pictures were taken at once. In either case we get the usual stereoscopic effect, such as is shown in the card stereograph, which I now introduce as Exhibit Morton No. 10.

It is evident, however, that if the lens remained fixed and the sitter were slightly turned between the two exposures, precisely the
457 same difference between the two pictures could be produced, and that they would then furnish an equally good stereoscopic effect. This is illustrated by the Card Stereograph Morton No. 11, E. G. T., which I now produce, which was made precisely in this way.

Such a motion as is necessary to produce a full steroscopic effect may readily be made by a sitter unconsciously to himself even during the rapid exposures of the present day when a sliding plate-holder is used. In evidence of this I put in Card Stereogragh Morton No. 12, which was made last September under the following circumstances: I went to have a likeness taken, and several plates were exposed in a sliding plate-holder before the photographer satisfied himself as to his results. I did not think of the matter at the time, but it occurred to me after the picture here shown was made, that these pictures might show some stereoscopic effect, and I therefore had prints from the negatives sent to me. On examining them two out of three showed a decided stereoscopic effect.

While it is thus easy to produce an excellent stereograph by a slight turning or lateral motion of the sitter, it is entirely impossible to produce any such by a mere vertical tilting, if we may so call it, of the sitter or raising and lowering of the camera. In the first place, this is self-evident as a matter of reason. The two eyes do not see things up and down in reference to each other, and up and down views cannot therefore combine to imitate right and left eye pictures, and thus to produce a stereoscopic effect. To prove this, however, practically, I have made the following experiment: I prepared two drawings (Morton 13 and 14), which, when properly combined in the stereoscope, give an excellent effect of a six-sided truncated pyramid, being respectively the corresponding right and left eye pictures of the same. If, however, these are turned around each of them through a quarter revolution, so as to assume the same relation up and down that
458 they before had right and left, it is impossible to combine them even into one image, some of the lines refusing to match, and no effect whatever of relief is obtained.

Further to test the same question, I prepared two photographs of a bust of Daguerre (Morton 15), in which the bust was tilted forward and backward by the insertion of a block of wood. These pictures, when mounted with every care, failed to show any true stereoscopic relief, although it should be here mentioned that, as is well known, any picture seen through a lens has a certain effect of relief, which is, however, of course, in no wise stereoscopic, and that the effort of the eyes to combine any two slightly dissimilar pictures produces a sense of strangeness, which might at the first be supposed by one unfamiliar with such such things to indicate some sort of relief.

A moment's comparison with an actual stereograph, such as Exhibits Morton 10 and 11, will, however, correct any such misapprehension. If, however, a pair of these same pictures are mounted lengthwise on a card, so that the up and down character of the views becomes a right and left distinction, then the stereoscopic relief is unmistakable, as is shown by Exhibit Morton No. 16.

I further made two pictures of a bust of Franklin, Exhibit Morton No. 17, by raising and lowering the camera between the two exposures. These, when mounted side by side, as in Exhibit Morton 17, show no true stereoscopic effect; but when mounted sideways show a very marked relief, as will be seen in Exhibit Morton 18.

The conclusions at which I arrive from these experiments and considerations are that an up and down motion of the camera cannot possibly produce pictures which, when combined in the usual way—that is, side by side—will show stereoscopic effect.

In examining the various exhibits prepared from the picture of the Pratt boy by Mr. Southworth and exhibited, I find that by far 459 the most striking as regards its stereoscopic effect is that one marked Exhibit 27, No. 10, in which the upper and lower right-hand pictures, numbered respectively 1 and 3, are attached, so that 1 is to the left and 3 to the right on the stereograph.

The experiments which I have already described conclusively prove that no such stereoscopic effect could have been produced as claimed by Southworth, in these pictures, by an up and down tilting of the camera. In fact, the stereoscopic effect in this stereograph is *in fact* very much exaggerated, and I was able to produce a corresponding one only by a very decided movement, which would have been equivalent to a lateral displacement of the camera of three or four feet. The picture so produced I now introduce as Morton No. 19, in which the same appearance of advance of the face beyond the chest, which is so remarkable in the complainants' Exhibit 27, No. 10, is likewise manifest.

It appears from these considerations, that this, the most marked stereoscopic effect produced in any of the sixteen stereographs referred to by Southworth, does not in the least support his theory as to the manner in which this picture of the Pratt boy was produced, but shows on the contrary that a very great change of position on the part of the boy between the exposures of these two pictures had taken place. This, of course, vitiates the deduction he has made by comparing either of these pictures with the one diagonally opposite to it on the Exhibit No. 28, and moreover shows that if so marked a motion occurred between these two exposures, it is exceedingly probable that a greater or less movement took place between the others. Even, therefore, if I found all the stereoscopic effects which he enumerates, I should consider that they demonstrated nothing whatever as to the manner in which the picture was taken, but simply that the boy whose likeness is here made had moved more or less. But I do not find in the 460 exhibits called Exhibits No. 27, 1 to 16, in many cases any further stereoscopic effect than such false ones as I have already alluded to as the result of the effort to combine two pictures in no respect stereoscopic, but simply slightly different. Moreover, in certain of these I find evidence of partial movements, such as the evident movement of the right hand, shown in Exhibit 27, No. , made by combining 2 and 1 of Exhibit No. 28. There is here a marked stereoscopic relief of the right hand, but of no other part of the picture. It hardly needs statement that no such effect as this could result from the movement of a camera in taking a picture.

I am therefore of the opinion that the examination of these pictures proves nothing whatever as to the mode of taking the picture suggested by Southworth, but even on the contrary, by reason of the want of any general true stereoscopic relief in the pictures Exhibit No. 27, No. 7, 1 and 2, which ought to show it in a decided manner, if the picture were taken by moving the camera, and also in picture Exhibit 27, No. 4, which likewise should show it, that the stereoscopic evidence is decidedly against the theory of Southworth; which conclusion is, of course, in no wise weakened by the fact that the pictures 1–3 on Exhibit 27, No. 10, which, according to the same theory and manifest fact, should not show any stereoscopic effect, exhibit an exaggerated one.

The argument in answer to interrogatory 13, founded on a supposed shading-off of the light towards the corners of the plate in Exhibit 28, or its equivalent among the other exhibits, likewise seems to be without weight for the following reasons: 1st, as I have shown in a previous answer (question No. 1), and by Exhibit Morton No. 8, such shading-off does not extend beyond the extreme margin or edge of the field, and a simple inspection of this plate, Exhibit 28, shows us that no part of this picture came upon that extreme margin or edge of the field, except possibly those extreme corners where the friction of 461 the mat or other cause has entirely rubbed off and obliterated any photographic indications which may have there existed. It is true that in picture No. 4 the left-hand lower portion of the background is darker than the upper part; but on the other hand, in No. 2 and No. 3 the corresponding portions in reference to the edges of the field are fully as bright as any other part of the plate. If any such penumbra were visible, moreover, as assumed by Southworth, it would be just as probable that they were caused by the lens which produced this copy as by the method of taking the picture which he suggests. The differences in measurement which are alluded to are all explained by the fact which I have just demonstrated, of motion on the part of the sitter.

(The various stereographs referred to offered in evidence and marked Exhibits Morton 10 to 19, inclusive, E. G. T., ex'r.)

Adjourned to March 31, 1876, at 1 p. m.

NEW YORK, *March* 31, 1876—1 p. m.

Met pursuant to adjournment.
Present, counsel as before.

And the witness, Dr. HENRY MORTON, in answer to further interrogatories propounded by Mr. BLAKE, says:

Q. 7. Referring to the answer of Southworth to Q. 47, complainant's evidence in rebuttal, pages 126 and 127, please state whether or not you agree with the conclusions at which he arrives in that answer, an give your reasons for any opinion you may express.

(Same objections as to previous question.)

462 A. So far from agreeing with the opinion expressed in the said answer, I consider that the various markings and other indications upon the pictures of Mrs. Haas referred to, and among them many of the points referred to by Southworth, are entirely inconsistent with the method of taking the picture suggested by him, and can only be accounted for on the supposition that the picture was actually made in the manner which I shall now describe:

To the back of the camera-box, made of a proper depth to suit the

focus of the lens attached to it, was fastened a flat board considerably larger than the usual frame, with a moulding or rabbet as indicated by B C in Fig. 1, in Exhibit Morton 20, which I now introduce in the case; within this was a smaller plate-holder having a frame projecting a little upon the edges of the plate on the side towards the lens and otherwise arranged so as to hold a sensitive plate and to allow itself to be moved and held in the successive corners of the larger frame. E F, Fig. 1, indicates this plate-holder. In the middle of the large piece of board B C, was cut a rectangular opening a little smaller than one-quarter of the plate-holder. This opening is indicated at A of Fig. 1. Supposing now that the lens of the camera were pointed at a figure and so adjusted as to bring a sharp image upon the portion of the plate opposite the opening A, it is evident that in the position indicated in Fig. 1 an image would be formed in the centre or best part of the field, and occupying the upper right-hand corner of the plate in its then position. The image or picture would have a margin or border defined in the following way: Its left-hand vertical edge would be produced by the left-hand vertical edge of the aperture; its lower horizontal edge would be produced by the lower horizontal edge of the aperture; its vertical right-hand edge would be produced by the vertical inner edge of the frame in the plate-holder, and its horizontal upper edge would also be produced by the horizontal inner edge of the
463 frame in the plate-holder. When this picture had been taken,
the front of the camera would be closed and the plate-holder moved into the position indicated by E F in Fig. 3. A picture would then be taken on the lower right-hand corner of the plate; its left-hand vertical edge would be formed by the same left-hand vertical edge of the opening which formed the left-hand vertical edge of the first picture; its lower horizontal edge would, however, now not be formed by the edge of the aperture as in the first picture, but by the edge of the frame of the plate-holder. Its right-hand vertical edge would, as before, be formed by the inner vertical edge of the plate-holder, but by a different part of that edge, and lastly its horizontal upper edge would no longer be formed, as in the first picture, by the edge of the aperture, but by that of the frame of the plate-holder. Without following step by step the relation of these points, but merely referring to Figs. 2 and 4 of the same exhibit which represent the two remaining positions of the plate-holder and in which similar parts are indicated by corresponding letters, it is evident that when the four exposures had been made we should have four pictures upon the same plate, made each of them in the central or best part of the field of the lens, without removing the plate from the camera, and identical with each other, except—

First. By reason of any movement on the part of the sitter.

Second. Any change in the direction, intensity, or other adjustment of the light.

Third. Any difference in the time of exposure.

Fourth. And the following variations in the size of the square outline or edge of the several pictures and in the markings upon the same whose character and origin I shall now more fully describe.

Referring to Fig. 5 as a diagram representing the plate with its pictures in the same position in which they were taken as though it were transparent and we were looking through (to avoid the confusion
464 of supposing it turned over), we will observe that the left-hand
vertical edges of pictures 1 and 3 being both produced by the left-hand vertical edge of the aperture, would have upon them the same markings, *c d* and c^1 d^1, if there were on the edge of the aperture any

irregularities by which such markings could be produced, and that these markings would have the same relative position in each picture, the upper one in 1 would be the upper one in 3, and so on. If, however, the aperture were not exactly placed in the centre of the large frame, it is evident that the frame of the plate-holder might overlap the margin in the position Fig. 3 a little more than it did in Fig. 1; and if the frame in the plate-holder were not perfectly regular, it might overlap the plate a little more in one part than in another, and so produce a difference in the width of the first and second pictures. The same effect might be produced by a slight want of central position in a sideway direction of the aperture, in relation to the large frame or by a slight irregularity of the frame. Again, it will be noticed that in pictures 2 and 4, Figure 5, a similar identity in the relative positions of any markings on the vertical right-hand edge should be looked for while an irregularity in size and in the character of the outer edges should be equally anticipated.

Referring now to the picture of Mrs. Haas, which is here under consideration, we see near the bottom of the left-hand edge of pictures 1 and 3 a well-marked and easily identified notch, and near the top of the same edge a marked outward curve or projection on the margin of both pictures; similarly we observe almost opposite the elbow of the figure on the right-hand margin of pictures 2 and 4 a well-marked projection easily identified in each and almost in line with the eyes of the figure a small sharp notch, also easy to recognize. These markings which I believe are the very ones referred to by Southworth in his answer noted above, evidently correspond with the explanation which I have just given, and entirely agree with the requirements of the
465 method for taking the picture which I have assumed; so do the irregularities in the sizes and outer margins of the pictures noticed by Southworth as above. Let us see now how far they would agree with the theory he has himself suggested as to the taking of the picture. It is true that he does not make any mention of the use of a slide or shield in taking the pictures by the method which he states must have been used, namely, by raising and lowering and swinging the camera, but the use of such a shield in this method is absolutely essential. It would be possible to have four different shields or slides each one with about a quarter cut out as in Fig. 6; but of course we could then expect no coincidence in the markings on the edge produced by irregularities on the edge of the cut-out portion of such shield or slide. The only way in which coincident markings in any sense could be produced would be by the use of one shield such as Fig. 6 for taking two pictures. If this were used, for example, by sliding it into a plate-holder such as Fig. 5 may be taken to represent it would leave exposed the corner marked 2, and the irregularities *e f* Fig. 6 would produce corresponding markings on the vertical right-hand edge of picture 2. If now this shield were turned over into the position indicated in Fig. 7 it would, of course, expose the corner of the plate marked 4, and the irregularities *e f* would again produce their impressions on the vertical right-hand edge of this picture; but it is manifest that in place of the marking produced by *e* being above it would now be below, and the marking produced by *f* in place of being below would now be above. It appears, therefore, that the positions of these markings actually found in the picture of Mrs. Haas is entirely inconsistent with and irreconcilable to the theory of its production proposed by Southworth. The reasoning applied to these two edges applies equally

well to the corresponding vertical edges of pictures 1 and 3, and renders this evidence cumulative in the strongest way.

466 The statement made by Southworth in the same answer that there was a change in the point of view in the pictures 1 and 3, 2 and 4 respectively, and that these pictures were made with a large lens and at a distance from the sitter appear as simple assertions, unsupported by any reasoning, which need no comment from me.

(Drawing referred to in the preceding answer offered in evidence and marked Exhibit Morton 20, E. G. T., ex'r.

Answer objected to for the same reasons as the question, and because theories, matters, and experiments are introduced, touching which no enquiry was made and no testimony introduced in plaintiffs' testimony in rebuttal, or in any previous testimony.)

Q. 8. Referring to the latter part of the answer of Southworth to question 22 and on page 116, complainants' evidence in rebuttal, where he gives certain deductions, and makes reference to the action of spherical aberration, etc., in these words, to wit:

"The causes of these variations are, first, differences in the points of sight in all the four numbers; second, spherical aberration. In measuring from corresponding points in the pictures some parts vary slightly, and some to the extent above stated, about one-sixteenth of an inch. The change of the point of view varies a flat portion of the object slightly or not perceptibly; whilst it may vary an outline or projection widely. In picturing any portion of the object or circular view, spherical aberration varies from the centre of the field of view as we approach the extreme outer limit of the circle. The same objects in the same portions of the different parts of the circle of view, having the same relations to the axis of the lens, will not vary; whilst the ball in the centre of the view will be pictured smaller than those at the extreme outer limit which may measure the same; so of any solid figures, as heads, etc. In the Pratt-boy exhibit, this spherical aberration is readily measured and demonstrated by superposition."

467 State whether or not you concur with those statements, and, if not, give your reasons for the opinion you express.

(Question objected to for the same reasons as the preceding one.)

A. The statements in question are, in the first place, somewhat obscure, and imply a confusion in the mind of the person making them between spherical aberration, what is properly known as distortion, want of flatness in field, and that peculiar distortion of the images which results from no property of the lens, but from an action which may be well described by the term, foreshortening. In addition to this, I should entirely dissent from most of the statements contained in the passage quoted when they are disentangled from this confusion and rendered intelligible. In order to explain these points, I will first state what is the real nature of the well-known action of a lens, defined by standard authors as "spherical aberration." Spherical aberration is the action by which a lens, on account of its spherical shape, acts more powerfully in bending the light rays which fall upon its margin, than upon those which come upon its centre. In consequence of which, with an ordinary convex lens, for example, parallel rays falling upon it will not all be focalized or brought together at a common point, but will meet at a series of points more or less distant; those which fall upon the lens nearest its centre meeting at a greater distance, and those which fall nearer the margin meeting at a less distance. Thus, in Fig. 1, Exhibit Morton 21, let A B represent a lens, with parallel rays C D, H I falling upon it. Then will the rays nearer the centre or axis X F,

as H I and K M, be brought together at a point, F, while the rays falling near the margin, as C D and E G, will be brought together at a point F¹, much nearer. The rays intermediate between these will be brought together at points situated between F and F¹. The result of
this action is that if a screen, P Q, were placed at F, there will be
468 a sharply defined point of light or portion of an image formed by
the central rays, which will be surrounded by a circle of scattering rays which have met at the point F¹, or other intermediate points, and crossed and scattered before reaching the screen. The effect of this upon an image produced is, of course, to render its details blurred and ill defined, but not in any direct way to distort it. The errors produced by spherical aberration are therefore essentially what is called "want of sharpness" or "want of definition," which may exist in the centre of the field as well as at the margin. The distortion of figure, such as that shown in the photograph of a background put in by me as Morton Exhibit No. 8, is due to what is called aberration of thickness, and is entirely different both in its cause and effects. It comes from the fact, rendered especially marked when a lens is used with a stop or diaphragm, that the rays forming different parts of the image pass more or less definitely through certain parts of the lens, and thus suffer an irregular bending in consequence of its (the lens's) varying thickness. Thus, suppose rays of light from a straight, vertical, luminous object, A B, not in the axis of the lens C D, to be restricted by the diaphragm E F, and to fall upon the lens C D, it is evident that those rays which came from the object where it was nearest to the axis of the lens would pass through a thicker part of the lens than those which came from the ends of the object and which, consequently, passed through the lens near its margin. These marginal rays would then be more bent than the others, and would thus cause a curvature in the image. This is shown at Fig. 2, Exhibit Morton No. 21, where A B represents a vertical object not in the axis of the lens; E F, a diaphragm with a small opening at O; and C D a lens. The points at which rays from this object, A B, would strike the lens are indicated by the letters *b*, *c*, *a*; and it will be seen that *b a* will be much nearer the margin of the lens than will *c*, and thus the image on the screen M N, will be curved in a general way as represented.

469 It will be seen, however, that this distortion has nothing to do with the flat or solid character of the object, and, indeed, would be most conspicuous in copying a series of straight lines ruled on a sheet of paper, as in the case of my Exhibit 8, than in any other way.

It is, however, greatly reduced by even a moderately good construction of lens, and is confined to the extreme margin, as is shown in the same exhibit.

Thirdly. We have an error in lenses known as curvature of field or want of flatness. This comes from the fact that rays of light passing through a lens obliquely have much further to travel before they can reach a flat screen at right angle to the axis of the lens than those which pass through nearly parallel to the axis. If, therefore, they were all brought to focus at an equal distance from the centre of the lens, these oblique ones would meet before they reached the screen, if it were placed at a proper distance for the axial rays. To obtain a sharp definition for all, therefore, we should need a screen having a hollow spherical, or cap-like form. The want of this or the use of a flat screen produces, however, not distortion, but a blurring or bad definition in the image. Besides these there is another sort of distortion which I have fully explained in my previous testimony in this cause of Sept. 3, 1874, to be found on pages 46 et seq., which is caused by no error of the lens, but would be fully developed by a lens perfect in its optical relations, and may be well defined as an action of foreshortening. It depends entirely upon the solidity of the object pictured; does not occur, therefore, when flat surfaces are copied, and does not of necessity cause an object in the centre of the field to be depicted smaller than one near the margin, such a result depending entirely upon the shape and position of the object.

Having thus defined the nature, cause, and effects of these various
sorts of error or aberration connected with lenses, and the pict-
470 ures they produce, it will be evident that the statement of South-
worth involves the assigning to spherical aberration of actions which it does not produce, and the assumption that differences in measurement would result from causes which we thus see could not produce them.

Adjourned to April 1, 1876, 10 a. m.

NEW YORK, *April* 1, 1876—10 a. m.

Met pursuant to adjournment.

Present, counsel as before.

And the witness, Dr. Henry Morton, in continuation of his answer to question 8, says:

Thus, for example, at the end of the passage quoted is the following: "In the Pratt-boy exhibit, this spherical aberration is readily measured and demonstrated by superposition."

But since, as I have shown, spherical aberration does not produce distortion, but only indistinctness, measurement or superposition would not tend to show or demonstrate it.

Again it is stated: "The same objects in the same portions of the different parts of the circle of view, having the same relations to the axis of the lens, will not vary." This, however, would only be true if the objects were spheres or were immovably fixed in certain determined positions. If the objects were of an irregular shape, a very slight movement would cause considerable difference of variation in their images.

Again it is stated: "The change of the point of view varies a flat portion of the object slightly or not perceptbly, whilst it varies in outline widely." In this sentence it is, in the first place, evident that the words "outline or projection" are not used in their proper sense, for
in that case, they would mean "flat surfaces," or what is equiva-
471 lent thereto, but are intended to be equivalent to the phrase, the
"outline" of a projecting or solid object. Now, from what has been explained above, it is evident that as far as spherical aberration or the other sources of error in lenses are concerned, the difference or variation produced by them in connection with the change of the point of view would be as manifest, or indeed much more manifest, in reference to a flat object than in connection with a projecting or solid one. The change in dimensions of the image by the foreshortening action, which has nothing to do with the lens or its errors, would be the only one among those mentioned in which the solidity of the object would have an effect; and, as we have just seen, that effect would depend quite as much upon the motion or fixedness and shape of the object as upon any change in the point of view.

Besides all these sorts of aberration, error, change of dimension, or other variation mentioned by Southworth, there is another source of

variation in the image produced in making photographs under such conditions as here considered, which is of greater practical importance than any of those which have been enumerated, and that is the variation resulting from differences in distance between different parts of the object or the same parts of the object at different times, and the lens, in its relation to the sensitive plate or image. These relations are involved in the familiar technical terms "depth of focus," "change of focal plane" and relations of "conjugate foci," and may be thus explained: Let A B represent a lens whose principal focus is at F. If parallel rays, or those from an object at so great a distance that they were practically parallel, fell upon the lens, they would produce an image of said object in the plane C D, passing through F. If, again, rays from a point H, situated at twice the principal focal distance O F,
fell on the lens, they would be brought to a focus and produce
472 an image in the plane C^1 D^1 passing through F^1; the distance of F^1
being about twice O F. If now rays from an object H^1, still further off than H, fell upon the lens, they would produce an image in a plane passing through same point F^2, located between F and F^1, and nearer to F, as the point from which they came (such as H^1) was further and further away. A fixed relation easily calculated would, however, always exist between the distance H^1 O of the object from the lens and the distance F^2 O at which its image would be formed. These distances are called the "conjugate focal lengths," or, for brevity, the "conjugate foci," and evidently with the same lens may have an infinite variety of relations, but always subject to a fixed law, and the general rule that the greater the one the less the other. Moreover, the size of the image of the same object will vary with its distance from the lens, the size at the special distances H O and O F^1 respectively being just equal to that of the object, and growing smaller and smaller as the object is removed in the direction of H^1. Now, suppose that one portion of a figure is at a distance H^1 O, its image will be formed on the plane passing through F^2, and will have a certain magnitude and a certain degree of sharpness or clear definition depending upon the goodness of the lens. Suppose, however, another portion of the object were farther from the lens, its image would not be formed upon the plane of F^2, but at a less distance from O, and would be smaller. If, however, the difference of distance were not too great, a less defined image would be impressed upon the plane of F^2, and we should then have in the picture taken in this plane one part of the object sharply represented and another part less sharply; this difference, however, not depending upon any relation to the axis of the lens or the centre of its field of view, but upon the relation between the distances from the lens of the object and sensitive plate or image. If then between two exposures in an identical part of the field of the lens a slight backward or forward
motion of the object occurred, it might render that part of the
473 image which was before ill defined, sharp and distinct, and vice
versa; for of course a movement towards the lens from the best distance in a given case would throw the conjugate focus back of the sensitive plate, and so produce an ill-defined or imperfect image.

On the other hand, suppose that the sensitive plate during one exposure, is located accurately in the plane F^2, where it receives a sharp image of that part of the object located at H^1, and that in the second exposure it comes a little nearer to the lens; it would then be no longer in the right position to get a sharp image of that part of the object located at H^1, but would come into position to receive a sharp image of some part of the object more distant from the lens, the size of the images of course varying in the two cases.

This action which I have thus described and illustrated is one which has its greatest development in portrait lenses for reasons which it is unnecessary here to explain, but about which there is no question, and in the ordinary portrait combinations, especially the older ones, produced effects far more marked than any resulting from the sources of error, before discussed, which in such lenses were pretty well corrected. It is therefore manifest that no discussion of variations in definition and measurement of pictures, in which this most prominent cause of both is entirely neglected can have the least practical value.

(Drawing referred to in the preceding answer, having Figs. 1, 2, and 3 offered in evidence and marked Defendants' Exhibit Morton No. 21, E. G. T., ex'r.

Answer objected to for the same reasons as question, and because theories and matters are introduced touching which no enquiry was made, and no testimony introduced in plaintiffs' testimony in rebuttal, or in any previous testimony.

Counsel for defendants refers counsel for complainants to that 474 portion of the question which quotes a part of the answer of complainants' witness Southworth in his evidence in rebuttal.)

Q. 9. Have you read, and do you understand the answer of Southworth to question 22, complainants' evidence in rebuttal, pages 111, 112, 113, 114, 116, 117, 118? Do you agree with him regarding the facts, as therein stated, about the picture of the Pratt boy, Exhibit No. 10, and his general references and statements in connection therewith, and to the conclusions he draws therefrom? If you do not, please give your reasons in full In making your answer, please refer, if necessary, to the various exhibits introduced by Mr. Southworth relating to the Pratt boy, Defendants' Exhibit No. 10.

(Same objections.)

A. I have read the said answer, and I believe that I understand it.

I do not, however, find all the statements therein contained to be supported by an examination of the exhibits referred to, and I entirely dissent from the conclusions deduced by Mr. Southworth.

Defendants' Exhibit No. 10 is so exceedingly imperfect a photograph; so totally wanting in sharpness and detail all over that I do not consider any minute criticism can be rationally founded upon it. A considerable portion of the actual picture, as shown in other exhibits, is cut off in this one by the mat, and many of the shades round the edges alluded to by Southworth which are seen in this picture, are entirely absent in the better copies from the same original daguerreotype which have been introduced by him.

By reference to my last answer it will, however, be seen that even if differences in detail between the different pictures could be definitely recognized as belonging to the original, they would be fully explained. By differences in the time of the exposure of the various pictures, a slight forward or backward movement on the part of the sitter, changes in the light, and the fact that, as shown in my 475 answer No. 6, and accompanying Exhibit 20, the frame of the plate-holder would cover up portions of the lower parts of the two lower pictures, while the corresponding parts of the two upper pictures would not be so covered, but would be limited only by the edge of the aperture. Thus, for example, Southworth draws especial attention to the checks on the figure of the pants and their folds.

Referring to Defendants' Exhibit 10, as does Mr. Southworth in his answer, it seems to me to require a considerable stretch of the imagination to recognize the checks on the pants in the two upper pictures; but assuming they are there, there is the best possible reason, quite independent of his theory, why they should not be seen in the lower pictures, namely, that the mat cuts off these pictures at a considerable distance above the point at which the pants would be seen. The same remark applies to the "folds in the coat on which the right arm rests," and "the left hand with the glove upon it and the lower buttons of the dress"; none of these are visible upon the lower pair of pictures, for the manifest and sufficient reason that the "mat" covers the portion of the plate in which they would occur, if present.

Similarly, the "chair-arm" in the upper left picture, as we view the plate, is not seen in the corresponding lower plate, because its place is entirely covered up, and for a similar reason is absent from the upper right picture. So also as regards "the spot of light over the chair under the left arm in the right upper picture" is not there, because its place is covered by the frame.

Indeed, there are such a multitude of discrepancies between the statements of Mr. Southworth as to this exhibit and the exhibit itself that I can only suppose he must be referring to some other exhibits than this one which he names.

I will, therefore, in my further references to his evidence in
476 this place, assume that such was the case, and consider Complainants' Exhibit No. 31, which appears to be a much more accurate copy of the original daguerreotype, as the object referred to. In regard to this, and to the references thereto by Mr. Southworth, I would say that there is in the first place a manifest difference in the time of exposure of the various pictures, causing some of them to be much darker, and consequently deficient in detail in the darker parts, such as the dress, than others. Thus, No. 1 shows much less detail than No. 2 in the dress, though, according to Southworth's theory, these would have been equally well placed for the development of this. I would also draw attention to the fact, fully demonstrated by the stereoscopic comparisons and experiments noticed in my answer No. 6, that there had been a decided movement in the figure between the exposure of the two upper and lower pictures. This movement of itself would account for all the differences in sharpness of different parts which are even claimed by Southworth to exist. This same motion, taken in connection with the fact that the "mat," or perhaps, also, the frame of the plate-holder, when the picture was taken, has covered a portion of the lower picture, will explain the differences of light under the arms remarked upon by Southworth in folio 411. The same motion will also explain the difference in the breadth of the hair as seen in pictures 1 and 2 and 3 and 4. This also explains the difference in measurement stated in folio 412.

In reference to the statement in folio 413, as follows:

"Any two of the four arranged for the stereoscope show relief as to parts, however arranged, as they may be in twelve different positions." I would remark that, as I have shown in my answer to Q. 6 in this deposition, this very statement, if true, would be fatal to the theory that such stereoscopic effect resulted from the taking of the pictures in the manner stated by Southworth in the same paragraph, and hence would fail entirely to carry the deduction which he has drawn. As a
477 matter of fact, however, the stereoscopic effect of these pictures

is manifest in a marked degree only in those combinations of them which would fail to support his theory, and is not perceptible in just those cases where, according to his theory, it should be most manifest. Thus following up in detail the references he has made to them, if in the first place we take the combinations No. 2 and No. 1, as contained in Exhibit 27, which, according to Southworth's theory as to the mode in which they were taken, ought to produce a pseudo-scopic effect, and compare it with the combination 1 and 2, which, according to the same, should produce a stereoscopic effect, and examine them both in the stereoscope, I find no difference whatever, except in the case of the boy's right hand, which seems in the first case to stand forward, and in the latter to stand back of the other, implying a decided movement in this part of the figure alone; and it is this movement which explains the reduction of the light spot under the right arm in picture 1. Taking the combination 3–1, which, as I have before explained in my answer to Q. 6, could not, on the Southworth theory as to the method in which the picture was taken, produce any stereoscopic effect at all, and comparing it with 1–3, which also should produce no stereoscopic effect, we find that the latter produces a most exaggerated relief in the case of the face and the right arm, while as regards the body generally there is no relief whatever. The other combination—that is, 3–1—might be supposed, under these circumstances, to present a strong pseudo-scopic effect—in other words, giving the face the appearance of a hollow mask receding into the background; but as such an appearance is utterly contrary to our common experience as to such an object as the human face, it is practically impossible to obtain that appearance with such a picture, and the effect is, therefore, practically to produce no appearance of relief.

478 Referring next to the combinations 3–2 and 2–3, we notice that, as we should anticipate, 2 being practically identical in position with 1, except in the right hand, the combination 2–3 is like that of 1–3, and 3–2 is like 2–1, except that the hand is so far displaced in comparison with other parts of the figure that it seems impossible to combine its images when the other parts of the figure are united.

Turning to 1–4 and 4–1, we observe in 1–4 an appearance of projection of the face similar to that noticed in 1–3, and due evidently to the same cause, viz, the turning of the head and motion of the arm of the boy between the exposures of the two upper and two lower pictures.

In 4–1, which should give a pseudo-scopic effect, this seems wanting, for the reason already stated.

In the combinations 2–4 and 4–2 I am unable to trace any further appearance of relief than is due to the combination of pictures not stereoscopic, except that there is a slight relief in the lower part of the face, produced by the change of shape of the chin occasioned by the very broad smile of No. 4, and a slight relief of the right hand, which seems to have been an uneasy member.

Finally, in the combinations 3–4 and 4–3, I fail to see any relief other than that in the lower part of the face, and manifestly due to the No. 4 smile.

When, therefore, at the conclusion of his detailed discussion of these pictures, Mr. Southwell says: "There is no movement of figure, or change of body, or change in outline of head, neck, or shoulders, except that caused by movement of camera or lens," I must entirely dissent from his opinion, and state on the contrary that I find in these pictures the plainest evidence of a movement of the head and right arm alone. The changes in the several pictures produced by this move-

ment could not possibly have been developed by any movement of camera or lens, and I can only suppose that the "laws of aberration of light," to which he refers as proving the same, must be some
479 system of optics as foreign to any known to me as the phrase is to anything in the literature of optical science.

In the next place the statement by Southworth that the pictures could not have been made through the same opening or diaphragm, because of certain differences in measurement which he gives in detail, is fully disposed of in my answer to question No. 7 of this deposition, in which I have shown that the method pursued in taking the picture of Mrs. Haas, and which is identical in all essential particulars with the method and exhibit deposed to and presented by Pratt as used in taking this picture, would precisely produce such differences in measurement as are here found.

Adjourned to April 3, 1876, at 10 a. m.

NEW YORK, *April* 3, 1876—10 a. m.

Met pursuant to adjournment.
Present, counsel as before.

And the witness, Dr. Henry Morton, in continuation of his answer to the ninth question, says:

In other words, while in a certain sense these pictures are actually taken through the same diaphragm or opening in the large board B C, Fig. 1, Exhibit 10, yet as explained in my answer to question 7 in this deposition, there would be of necessity under the conditions assumed a difference in the size of said pictures, in the distance of the edges from corresponding parts of the figure, and in the character of these edges, such as are noticed by Southworth.

In reference to the variations in measurement noticed by Southworth in folios 422 to 425 inclusive, I should say that they undoubtedly result from those movements of the sitter the evidence of which I have
480 fully discussed in the previous part of this answer, and would not have resulted from spherical aberration or from a change in the point of view, as claimed by Southworth. This I have fully shown in my present answer taken in connection with the previous one.

In folio 426 Southworth states as follows: "Two pictures from different points of view, either to the right or left, or higher or lower, or with both variations embracing the same foreground generally, are required for the stereoscope to represent solidity by binocular vision." In this statement all that has reference to differences of "higher or lower" in the points of view is simply contrary to reason, fact, and the recognized authorities. That such is the case I have already very fully shown in my answer No. 6, in which I have proved, by experiment as well as on theoretical grounds, that a change in the point of view, up and down, has no tendency whatever to develop stereoscopic effect.

Turning now to the synopsis of his foregoing discussion, given by Southworth, folios 427 to 434, inclusive, I would remark in reference to each of his eight points as follows:

I. The penumbra or shading off which I find to exist on the edges of the field of an ordinary lens is confined to so narrow a margin that it would not reach to any part of the plate where its effect would be noticed in this picture. I do not find in the pictures of the Pratt boy any such shading off on the outer portions or corners as would correspond with the penumbra or loss of light which occurs at the extremity of the field of a lens; but, on the contrary, in two out of the four pictures these extreme portions or corners, excluding of course the parts of the plate rubbed off or otherwise obliterated, are as bright or brighter than the more central parts of the field.

In picture No. 4, it is true, there is a broad shade towards the corner of the plate, but this shade is not in the position occupied by the 481 penumbra found near the edge of a lens; and, moreover, a similar shade exists in Exhibit Morton No. 12, which was taken with a sliding plate-holder and with both pictures in precisely the same portion of the field. This shade is not only evident to me, but was remarked by Mr. Alvan Clark in his evidence, folio 536, where, in reference to another print from the same negative, he says as follows: "I observe, however, here a cutting off of the light upon the lower right-hand corner of the right-hand picture, which is ordinarily an evidence of the tipping of the camera." A similar shade is also noticed at the lower part of the two upper pictures in No. 2, Complainants' Exhibit No. 24, being there located exactly where it should not come, according to Southworth's theory. All which shows that such a shade is not necessarily the result of tilting the camera in taking the picture, but occurs from other causes, even when the picture is made according to the method claimed as essential in the Southworth device or in the method as testified to in the present case by Pratt. The whole background of picture No. 1 is much darker than that of any of the other pictures, and there is possibly a slight increase of shade towards the outer corner, but it is too slight to enable me to be positive as to its existence.

In brief then, first, a penumbra or shading produced by the margin of the field of the lens could not be expected to appear on these pictures if made according to Southworth's theory;

Second, is not found where his theory requires; and

Third, such shades as are found might equally be present in whichever way the pictures were taken. They, therefore, prove nothing whatever as to the mode in which this picture was made.

II. The different forms and outlines of the projecting portions as they actually exist correspond precisely with the differences which would be produced by a motion of the sitter, and do not correspond with 482 the differences which would be produced by a change in the point of view. They, therefore, fail entirely to support the theory that any change of point of view produced by moving the camera occurred during the taking of the pictures. It is, moreover, not true, as I have shown by several exhibits, that pictures taken according to the Southworth patent would have "all outlines of objects," etc., the same in each.

III. The effects of spherical aberration not being such as claimed by Southworth, the measurements which he has made would have nothing to do with it, and therefore would prove nothing in that connection. What they do prove is the motion on the part of the sitter, which his theory expressly ignores, and the existence of which would be fatal to his method of proof.

IV. The stereoscopic study of these pictures, variously arranged, reveals facts entirely inconsistent with Southworth's theory of their production, but in accordance with the statement of Pratt. Moreover, while Southworth here implies that stereoscopic relief could not exist in pictures taken according to his patent, the patent itself states that stereoscopic pictures may be produced according to its specification.

V. The differences in the size of diaphragm, as indicated by the differences in margins of pictures, are perfectly consistent with the method of taking the picture described by Pratt. And it is not necessary that in multiplying pictures, as described in the Southworth patent, the openings or diaphragms will be of the same length and breadth, as I have fully explained in my answer to question 7 of this deposition, and as is admitted in the testimony of complainants' witness Pike, the only one to whom the question was put.

VI. The irregularities on the edges of the two pictures to the right and the two to the left, in so far as they are recognizable, I regard as one of the strongest evidences that the pictures were taken in the
483 manner described by Pratt, and not in that suggested by Southworth. The discussion of this question, given in my answer No. 7, in reference to the picture of Mrs. Haas applies, mutatis mutandis, to these pictures, from which it will be seen also that the notchings or irregularities present in one picture will not exist of necessity in all when they are taken according to the Southworth patent.

VII. The want of identity in the several pictures as noticed by Southworth is admitted, but, as already explained, proves not a motion of the lens but a movement of the sitter, and would be found, and, as has been shown, is found, in pictures taken in the manner described in the Southworth patent.

VIII. This point, as given by Southworth, covers precisely the same ground as the previous one, and is met by the same answer.

Q. 10. Referring to questions 23 and 38 and the answers thereto of Southworth, complainants' evidence in rebuttal, pp. 118 and 119, and 121, 122, and 123, please state whether you agree with Southworth that it would be impossible to produce the pictures of the Pratt boy, Defendants' Exhibit No. 10, in the manner described by Pratt, giving your reasons for any opinion you may express.

A. I do not agree with Southworth in said opinion, but, on the contrary, consider it not only possible but in the highest degree probable that the pictures were made in the manner described by Pratt.

In his answer to interrogatory 38, Southworth refers to an unequal light as showing that pictures 1 and 2 were taken from a different point of view from pictures 3 and 4, which implies that pictures 1 and 2 were taken from the same point of view. This is of course, however, at variance with his theory and his statements elsewhere. Passing over this, however, he further draws attention to the details of the dress as better shown in the upper than in the lower pictures. To this I reply, that this difference, I think, is only manifest in such parts of the lower
484 pictures as were covered by the mat, as shown in Exhibit 10, and that if it exists elsewhere it would be fully explained by the movement of the figure between the exposure of the upper and lower pictures, which I have shown to have occurred.

In reference to the difference mentioned by him between the definition of the check or markings on the knees of the two upper figures, I notice that both are sharper in Fig. 1 than in Fig. 2, and that the markings on the boy's left knee, which would be most distant from the centre of the lens according to the theory of Southworth, are, if anything, better defined than on the corresponding knee of picture 2, which, in his theory, should be nearer the axis of the lens. In reference to the other knee, I see no difference except what is due to the fact that picture 1 has had a different exposure from picture 2, as is evident all over, and brings out the markings a little more distinctly in consequence.

With reference to the other points made in comparing these two pictures, I see no other differences than are accounted for by the evidently different exposures of the two plates and the motion of the boy's right hand, which has been before discussed.

The disappearance of the light under the right arm in picture 1 is undoubtedly due to the before-mentioned movement of the arm; and the minute difference in the light under the left arm might be due either to a slight accompanying movement of the body or to a difference in what may be called irradiation, consequent upon a difference in exposure.

As I have already stated, the stereoscopic test, when applied to pictures 1 and 2, fails to indicate relief, except in the case of the hand, where this is evidently the result of a movement, and we can, therefore, hardly expect to find by the coarser test of direct measurement any differences besides those connected with this movement in these pictures generally.

485 The comparisons which are next instituted by Southworth between pictures 1 and 2 and 3 and 4 severally, need not be noticed in detail, but are sufficiently met by the general statement that they are exactly such as would result from the motion of the figure which I have heretofore shown, and from the effects of the effort to smile, which Southworth has himself noticed.

In conclusion, then, I am of the opinion that a study of the very points alluded to by Southworth in his answer 38 supports the testimony of Pratt, and leads to conclusions inconsistent with the theory of Southworth.

Q. 11. Referring to questions 25 and 26, 39 and 40, to Southworth, and his answers thereto, complainants' evidence in rebuttal, pp. 119 and 124, please state whether you agree with Southworth that it would be impossible to produce the pictures of Mrs. Pratt, Exhibit No. 21, in the manner described by Pratt, giving your reasons for any opinion you may express.

A. I do not agree with the conclusions stated by Southworth, and for the following reasons:

The difference in detail upon the waist of the dress is evidently due to the fact that this portion has been more covered up by the frame of the plate-holder in the lower than in the upper pictures. This action is, in fact, very conspicuous in all the pictures taken by a sliding plate-holder in the manner I have described in my answer to Q. 1, of my present examination, and is also well shown by Exhibit Morton 22, which is a print from a negative taken in the slide Defendants' Exhibit No. 9, in which it will be seen that the lower part of the figure is better shown in the upper pictures than in the lower. This, also, resembles the pictures of Mrs. Pratt in Complainants' Exhibit 21, in that the various pictures overlap, a result caused by the fact that the aperture was a little too large in proportion to the movement of the plate-holder. This is, however, a matter affecting none of the general conclusions and not involved in the testimony of Pratt, as he produced this plate-holder, not as an absolute fac-simile of the one used, 486 but simply as a copy from memory, giving the general principle, but not necessarily accurate in each detail of measurement.

The want of light noticed in the lower part of the lower pictures 3 and 4 is also perceptible very strongly on the background of the inner corner of number 2, which is precisely the place where, on Southworth's theory, it ought not to occur, and the same remark applies to the inside upper corner of number 3. Moreover, the figure having turned round in a most marked manner in numbers 3 and 4, this movement could not possibly help producing a decided change in the relative distance of various parts from the lens. Thus supposing the plane of the face to have remained fixed, the right shoulder would have been thrown out of focus by coming nearer to the lens, and the left by going away from it. This is very conspicuous in number 4, where the right shoulder, which, according to Southworth, is in the worst possible position of the field, gives a much sharper image than the left shoulder, which is much nearer the centre or axis. In fine, this picture fails to support Southworth's deductions from it.

1st. Because the shadows or penumbræ do not occur in the places required by his theory.

2d. Because the difference in definition of parts accord, not with his assumed changes in the field of the lens, but with the self-evident movements of the figure.

And in reference to Southworth's answer to interrogatory 40, I would say that all the appearances noticed in this picture might occur if it were made in the manner testified to by Pratt.

Q. 12. Please look at Complainants' Exhibit 24, and state whether it corresponds with or differs from the picture of the Pratt boy, Defendants' Exhibit 10, giving your result and your reasons.

A. The Exhibit No. 24 consists of two pictures of four views each, slightly different in actual size, being evidently from two different negatives.

The picture marked 2 on this exhibit differs essentially from the Pratt boy in numerous particulars.

487 In the first place, instead of showing more of the lower part of the figure in the upper pictures than in the lower, it exactly reverses this.

Secondly, if cut down to a rectangular shape, similar to that of the Pratt boy, Defendants' Exhibit 10, and if the corners are cut off as in the same, there would no longer be any trace of the penumbra upon the picture, but there would be a darkening of the background in both upper and lower pictures at its lower part, and it would thus also be at variance with what Southworth finds in the Pratt-boy Exhibit. The inner margin separating the pictures is again totally different from that in the Pratt boy or Mrs. Haas's pictures, being utterly wanting in definition. When the several pictures are, moreover, combined in the stereoscope, we lack entirely all those instances of decided stereoscopic effect furnished by certain of the Pratt-boy pictures, showing us in the most conclusive manner—this exhibit being prepared by the complainants' witness and the patentee—that these stereoscopic effects found in the Pratt boy could not have been produced by the method he has claimed and here puts in practice himself.

The photograph marked 1 has its four pictures, each surrounded by a diaphragm, and shows no appearance whatever of the penumbra or fading off at the corners, even though these corners are full and in no wise cut off. It agrees, therefore, in this respect with what I find in the Pratt-boy picture, but is entirely at variance with the statement of Southworth on the same subject.

Q. 12. Referring to int. 60, and the answer thereto of Southworth, complainants' evidence in rebuttal, p. 131, fol. 483; please refer to the testimony given by Beckers, defendants' evidence, pp. 2–8, and state whether or not said Beckers has testified as to the use by him of other sliding plate-holder than the one referred to by Southworth, and by the use of which pictures were taken in the best part of the field of the lens, and which Beckers used prior to the date of complainants' patents, using in your answer any portion of said Beckers's testimony which may have reference to the matter enquired about in this interrogatory.

488 A. I find in the testimony of Alexander Beckers, in answer to interrogatory 5, p. 2, defendants' record, the following description:

"There was a small plate-holder made of metal merely large enough to hold the plate, in which the square opening was made to expose as large a surface of the plate as possible. This plate-holder would move in a large, square plate-holder in such a way that, by moving it into the four different corners of the frame, one-quarter of the plate would be exposed, as it then corresponded with the middle opening."

This apparatus, he states, was used by him in 1853, and he also states that he made another like it, but larger, in the winter of the same year. These would undoubtedly produce pictures, each of which would be taken in the same and best part of the field of the lens.

Q. 13. Have you read the testimony of complainants' witness, Alvan Clark, complainants' evidence in rebuttal, pp. 135 to 145? If so, please state whether you agree with or differ from the various statements made by him therein. And if you differ from any of his statements, please give the reasons for such difference, quoting from his testimony the passages to which you make references.

A. I have read the testimony of Mr. Alvin Clark, and think it very evident from the same that he was laboring under a misapprehension as to the chief point concerned in his evidence.

Thus in answer to question 5, p. 136:

"Those objects, or parts of objects, throwing their light upon that part of the plain nearest the optical axis of the instrument, would be considered the most fairly and perfectly represented. There the central ray is received upon the plate at right angles to its surface; as you recede from that the central ray is received with more or less obliquity upon the plate, and when you have receded far from the optical axis the obliquity becomes considerable. The plate is so foreshortened, that the same object would measure differently from what it would if pictured near the centre of the plate. In consequence of that

489 foreshortening of the plate, pictures are always considered better when taken near or upon the central portions of the plate."

This statement, though rather indefinite, is undoubtedly true, if it refer to solid objects, but not if it have reference to figures upon a plain surface, or, what is equivalent, the measurement of distances between points. In the first case, indeed, it follows the same line as taken in my evidence September 3, 1874, pp. 47 et seq. In applying the principle here laid down to the case of the Pratt-boy pictures in Mr. Clark's answer 11, p. 137, I find that he there compares, not the changes in profile, outline, or projection, but the distances between points essentially in the same plane, which therefore would not come under the conditions of his statement just quoted in any way. Thus he says: "If we measure from the right eye of one picture to the right eye of the other, and compare it with the measure from the same point on the lowermost visible buttons of numbers 1 and 2, we find the latter or distance between the buttons less than between the eyes; indicating that the axis of the lens was at or nearly at the lower portions of these two pictures. The two pictures appear to be more separated at the upper part than at the lower."

If this latter deduction were applied to the measurement of the outlines of solid objects under certain conditions, as of the billiard balls, they would be true, but applied as they are to the measurements be-

tween points essentially in a plane, they are radically erroneous. Indeed, my Exhibit No. 8 shows that distances between points in a plane at a distance from the centre of the field, would be less and not greater than near the centre, but that these differences would only be appreciable very near the outer limit or margin of the field, and not all at such points as are here selected by Mr. Clark. If, therefore, as without doubt is the case, Mr. Clark found these differences, they must either be regarded as disproving his conclusion that the lower parts of the pictures were nearest to the centre of the field, or that they resulted from a slight movement on the part of the sitter. This last, which is
489½ the natural conclusion here, agrees fully with the like conclusion arrived at from many other sources.

The same conclusion is arrived at if we consider Mr. Clark's further comparison, in the same answer of the pictures 3 and 4. He also has noticed the movement of the hand, but, strange to say, attributes it to a movement of the lens or camera.

Mr. Clark also observed a shading off in the outer corners of these pictures: but it will be noticed that, in his answer to X Q. 39, p. 144, fol. 536, he observes a similar shading or penumbra upon a picture which was unquestionably taken with a sliding plate-holder of the most approved form, and in the best part or centre of the field of the lens.

The error or misunderstanding in which Mr. Clark had fallen at the time of giving this testimony is further illustrated by the following statement:

In answer to X Q. 14, p. 139, complainants' printed proofs, is the following:

"If you were to rule a plane level surface into small squares of perfectly equal dimensions, and place it in front of the camera so that it should be perfectly parallel to the plate, in a good camera, the squares in the picture would be equal as they are in the original drawing; but if you tip that drawing out of parallelism to the picture produced, the squares would be unequal; those furthest removed from the axis of the camera will measure largest, and that portion of the picture which is most remote from the axis."

It will be here seen that Mr. Clark's statement in its first part agrees with what I have said, and shown in my Exhibit 8, and is at variance with his conclusion as stated in his previous evidence. But in the second portion he falls into an error, which will be manifest from a glance at the picture, which I now present as Exhibit Morton No. 23.

(Offered in evidence and so marked, E. G. T., ex'r.)

This is a photograph of a large sheet of paper stretched perfectly flat upon a drawing-board, and so placed that the intersection of the two middle lines at O was exactly in the axis of the lens. It was then so tilted out of parallelism to the sensitive plate in the camera as to
490 make the side A B more distant and the side C D less distant than the middle point O. Under these circumstances, a glance will show us that the squares most removed from the axis are not the largest, as stated by Mr. Clark, but, on the contrary, are the smallest.

In the course of his examination, however, Mr. Clark desired to correct the statement made in answer to X Q. 14. And in reply to redirect interrogatory 42, p. 145, corrected the previous answer as follows: "Those squares in the picture, lying to the right and left of the centre, provided the plate and the drawing are both kept vertical, will measure smaller in a horizontal direction, but they would retain nearly the same vertical dimensions. Accepting fully this correction, and turning again to Exhibit Morton 23, with the remark that the plate and drawing were kept accurately vertical, it will be noticed that the squares to the right and left do not, by any means, measure smaller in a horizontal direction but that, on the contrary, those to the right measure very much larger, and only those to the left are smaller; while in place of retaining "nearly the same vertical dimensions," they vary to the extent of about thirty (30) per cent. without going by any means near the limits of the field.

In connection with Clark's testimony as to his comparison of two of the Pratt-boy pictures, contained in answers to interrogatories 29, p. 141, 30 and 31 and 32, p. 142, it seems to me important to notice that when he applied the same means of comparison to Exhibit Morton A, which was another print from the same negative as Exhibit Morton No. 12 (which, as my answer No. 6 shows, was taken with a sliding plate-holder, exposing the two pictures in the same part of the field, and that, also, the best or central part), he comes to the same conclusion as he had reached in regard to the Pratt-boy picture, namely, that it must have been made by swinging the camera.

This shows the utter fallacy of the tests applied by him, since they led him to conclude that this picture, Exhibit Morton A, was made in exactly the way in which it was not.

491 In other words, he concluded from his tests, that Morton Exhibit A and the Pratt-boy pictures were made in the same way. Now, I know that Morton Exhibit A was made in a sliding plate-holder, in all respects practically identical with the Southworth contrivance and the method described by Pratt.

If therefore, I accept Mr. Clark's conclusion, that both pictures were taken in the same way, I am obliged to believe that the Pratt-boy picture was taken, as was Exhibit Morton A, in the manner described by Pratt, and not in the manner supposed by Mr. Clark.

Adjourned to April 4, 1876, 12 m.

492 NEW YORK, *April* 8, 1876.

Met pursuant to adjournment.

Present, counsel as before.

And the witness, Dr. Henry Morton, being produced for cross-examination, in answer to interrogatories propounded by Mr. ABBOTT, says:

(Counsel for complainants here now, by consent, objects to questions 10 to 14 inclusive, and answers 9 to 14, inclusive, for the same reasons as noted to the questions to and answers of said Morton in the earlier portion of this deposition, and with same force and effect as if made at the time of putting said questions and making said answers.)

X Q. 15. Have you taken an unusual interest in this case?

A. I have. After a careful examination of the testimony put in by complainants up to the time when Mr. Alvan Clark's testimony in chief was completed, I was so impressed with, as it appeared to me, the elaborate and ingenious misrepresentation or ignorance of scientific facts and theories that, as a scientific student, I felt, as it were, aggrieved at such a treatment of the science to whose study and development I had devoted much of my time, and thus took a special interest in following out and correcting these errors and misrepresentations.

(Counsel for complainants objects to all the above answer, excepting the first two words, as irresponsive and not called for by the question, and incompetent.)

X Q. 16. How many times have you been to Boston to be present at the taking of complainants' testimony in this case, and whose testimony was being taken the first time you were there?

A. I went to Boston twice exclusively in reference to this matter and
once besides, when I had other business at the same time in con-
493 nection with another case. The first time I attended the cross-
examination of Mr. Alvan Clark.

X Q. 17. At the last time when you were in Boston, as above referred to, when the deposition of Nicholas Pike was taken, did you not prepare, or substantially suggest to defendants' counsel, the cross-interrogatories, or many of them, which were propounded?

A. I assisted defendants' counsel in the preparation of most of the interrogatories; that is to say, those which involved questions of optical science.

X Q. 18. And did you not do substantially the same thing at the other times when you attended in Boston?

A. I did.

X Q. 19. Were not the fourteen direct interrogatories, or nearly all of them, which have been propounded to you in this deposition prepared before the deposition was commenced, and substantially by you?

A. They were prepared before the deposition, for the obvious reason that Mr. Blake, counsel for defendants, was absent most of the time, and his questions therefore had to be written by him beforehand. They were not prepared substantially by me, but by Mr. Blake. In fact, I had nothing to do with drawing up these questions beyond advising Mr. Blake, after he had drawn them up, that they would, in my opinion, enable me to explain the experiments which I had made, and deductions which I had drawn from them, and from my general knowledge of the science of optics, as to the matter involved in this case.

X Q. 20. Prior to the said fourteen interrogatories being put in form, did you not consult with Mr. Blake, or with the defendants' other counsel, Mr. Thompson, and suggest substantially the questions to be propounded, and refer to portions of complainants' record which should be stated or alluded to in the interrogatories?

A. I did not, substantially or otherwise, suggest any questions,
494 but of course had at various times consultations with Mr. Blake
and Mr. Thompson, in which I reported to them the results of my experiments and conclusions, and the bearings which these had upon the testimony of complainants' witnesses. As I said before, these questions were substantially and actually drawn up by Mr. Blake himself from his own knowledge of the case. During the examination, when some doubt occurred as to the numbers of the questions and answers referred to in Mr. Blake's written questions, I assisted in finding them in the printed record; and on one occasion, a delay being likely to occur from the absence of certain exhibits, I suggested the division of a question by which the portion referring to these exhibits might be deferred until the next day.

X Q. 21. When and by whom was Exhibit "Morton No. 8," made?

A. On the sixth of January, 1876, by myself.

X Q. 22. Where did you obtain the lens which you used in making it?

A. It was a lens belonging to the Stevens Institute of Technology, and I believe was bought second hand about two years ago from E. Weiskopf, No. 182 Centre street, New York City. I am not quite positive as we have two somewhat similar lenses, one of which was bought through Mr. George Wale from a friend of his; they were obtained for use with a magic lantern.

X Q. 23. Which two squares on this exhibit did you measure, as stated in your first answer, wherein you say the difference is about one-fifty-second ($\frac{1}{52}$) of an inch?

A. I have marked them A and B.

(Witness here marks two squares on Exhibit Morton No. 8—one A and the other B.)

X Q. 24. Suppose a photograph made of a background consisting of a sheet of dark or drab paper, how would the shading-off from the centre, or diminution of light, as you recede from the centre, com-
495 pare with a photograph of a background consisting of a sheet of
white paper?

A. It might be the same or it might be quite different. The use of a drab paper would introduce several sources of error; the color might not be equally disposed on the drab-paper backgrounds shading off more or less regularly from the centre towards the margins are very common in photographic studios; the coloring matter, as is very common with such material, might reflect very differently at different angles, and thus by so timing the exposure that the marginal portions of the field on the plate were not sensibly affected we might obtain a picture looking like Complainants' Exhibit No. 22, which might only represent a portion of the field of the lens, the outer margin not being photographically represented; the result of such a method would, however, by no means represent the true condition and character of the field of the lens employed.

X Q. 25. Please give the size of the "background" of which Exhibit Morton No. 8 is a photograph. I mean the size of the "sheet of white paper" stated in your answer; the distance it was placed from the lens used, and the size and arrangement of the lens and apparatus with which the photograph was taken, and the sizes and position of the stops or diaphragms.

A. The size of the drawing shown in the photograph was thirty (30) inches square, or, in other words, each of the small squares was three inches each way; the centre of the drawing was three (3) feet two and three-quarters ($2\frac{3}{4}$) inches from the centre of the front lens of the combination; the drawing was placed nearly opposite a large window, so that the shadow of the camera, or shade from it rather, should not fall on the drawing. The drawing was not illuminated by direct sun-light,
but by diffused light entering the window. The lens was what
496 would be commonly known as a quarter-size tube, with what is
commonly called by photographers a "back-focus" of about four and a half ($4\frac{1}{2}$) inches, so far as I recollect. I have no note of this. An exposure was first made with the full aperture; but this showing the lines blurred all over by spherical aberration, a stop was introduced having an aperture of, I think, a quarter ($\frac{1}{4}$) inch or over, and with this the negative of Exhibit Morton No. 8 was taken. This diaphragm was inserted between the two sets of lenses of the combination, as is usual.

X Q. 26. Then you took this photograph in the same manner and with the same care as you would have used in taking or making a photograph of an engraving, did you not?

A. That depends upon what use the photograph was to be put to. If it were to be used for some purpose requiring entire absence of distortion, I should have employed one of the superior forms of lens which are now manufactured for such purposes; as my object, however, was simply to show what would be the conditions of a lens, as regards distortion in different parts of the field, extent of penumbra and the like, when used in portrait photography, I intentionally selected a lens which would be no better in these respects than those in common use many years ago in portraiture. As regards adjustment, I used every precaution I thought of against accidental errors which might affect these points.

X Q. 27. Now, suppose with the same lens and camera with which you took this photograph, you were to take a photograph of an engraving of the same size, say thirty inches square; would you place the engraving in the same position as you did the said sheet of white paper, as to its distance from the lens, its parallelism with the lens, etc., and would you proceed in all other respects in taking the photograph of the engraving as you did in taking this photograph Exhibit Morton No. 8; if not, wherein would you vary, and for what reasons?

497 A. If my object were the same as in taking this picture, namely, to exhibit the nature and extent of the errors of the lens, I should pursue the same course exactly; but if my object were to make a good picture, I should not attempt to use the field of the lens to its extreme limits, but should so adjust the distance of the picture, and, consequently, the size of its image on the plate, that this would be included within the practically available area of the field, without encroaching on the half-inch, or thereabouts of marginal distortion.

X Q. 28. Suppose that with a one-sixth ($\frac{1}{6}$), instead of a one-quarter ($\frac{1}{4}$) lens, with a focus proportionately shorter, and with a camera to correspond, you were to take a picture of a living subject, with a background of light, unbleached cotton cloth behind the sitter, at the usual distances, say about three feet, the picture to be of a boy about the age of the Pratt boy, and of the size of the Pratt-boy picture on Defendants' Exhibit No. 10, and to be taken in the centre of the field of the lens, and taken with full size of lens without a stop, the whole field of the lens being shown on the plate as in taking single portraits, what possible relation would the photograph of the background have to the penumbra or shading off of Exhibit Morton No. 8? Or, in your opinion, would the photograph of such a background bear any resemblance, and if so, what, to the photograph Exhibit Morton No. 8, of the sheet of white paper with lines drawn upon it?

A. There would be this resemblance: that each picture would represent the penumbra or shading off on the margin of the field, produced by the lens with which it was taken, with which the drawing of lines shown in my exhibit would have nothing to do one way or another, these lines being introduced to illustrate another point, as I have before explained; namely, the marginal distortion of a lens, which, 498 in this instance, there being no part of the picture anywhere near the margin, would not be involved in your supposed case.

X Q. 29. In the case supposed in the last interrogatory, how would the shading-off of the photograph of the background towards its margin compare with Exhibit Morton No. 8, in that respect?

A. I should expect to find it pretty much the same.

X Q. 30. Would you expect to find it substantially as shown on Complainants' Exhibit No. 22?

A. Omitting the circle scratched with a sharp point, and also the circumstance that the shading-off is much more manifest on the right side of said exhibit than on the left, I should think it might be much like this, which would then not greatly differ from my Exhibit No. 8.

X Q. 31. Has the scratched circle you refer to above anything whatever to do with the shading-off referred to?

A. In so much as it decidedly conveys the impression that it represents the limit of the field of the lens, and that, therefore, all the dark part within it forms part of such shading-off, I should say that it did.

(Counsel for complainants states that he does not know and is not informed when, by whom, nor for what purpose said scratched circle was made, and presents to the deponent another photograph of the same background from the same negative with no scratched circle.

Counsel for defendants makes the same statement with regard to the scratched circle on Complainants' Exhibit No. 22, and calls attention to the fact that by measurement the scratched circle corresponds exactly with the circular background in Complainants' Exhibit No. 23 as cut out, and requests counsel for complainants, if he desires to substitute "another photograph of the same background," to sub-
499 stitute one that more nearly corresponds, in color and general appearance, with Complainants' Exhibit No. 22.

Counsel for complainants does not seek to withdraw Exhibit No. 22, and has no other photograph from that negative excepting the one now presented, which was used in another case now adjusted, and, if he had the negative here, would readily comply with the request, and now offers in evidence the photograph marked Complainants' Exhibit No. 22^{1}, E. G. T., ex.)

X Q. 32. And repeats X Q. No. 30 as to this Exhibit 22^{1}.

A. Observing that in this picture, also, the centre of greatest brightness is not in the centre of the apparent field, but that the penumbra on the upper and right-hand margins, as the print is here mounted, is much more extended than on the other portions, and that the print has been evidently over exposed or otherwise treated, so as to give no true or high light in any part of the field, I should say that this print might have been produced from the same negative as the others, but that it exaggerates the actual fading-off of light on the field of such a lens as has been described, of which the exhibits before introduced by complainants would give a more accurate representation.

X Q. 33. Regarding the background as usually placed in taking portraits as considerably beyond the focus of the lens—in this case about three (3) feet—how would that fact affect the shading-off towards the outer margin?

A. The area of the background being in both cases sufficient to fill the entire field, its distance would be immaterial, as it would simply serve as a uniform area of illumination.

X Q. 34. Then I understand you as saying that as to any effect touching the shading-off towards the margin, as above spoken of, it makes no difference whether what we have called the background is in focus or three feet beyond the focus. Am I right?

500 A. You are.

X Q. 35. Referring to your first answer in this deposition, please state by whom answer No. 32, which you quote, was made?

A. According to the printed record, by Mr. Wing.

X Q. 36. Now, will you refer to page 106 of complainants' printed record, and to Southworth's answer to third interrogatory, from which you quote in your answer about three lines, and please examine the whole of that answer, containing twenty-two lines. The first part of the answer is as follows: "In the centre, or near the axis of the focus of the lens, is the best portion of the lens for use in making photographic portraits and other pictures." Is that statement, in your opinion, correct?

A. It is inaccurate in some respects. In the first place, there is no such term known to optics as "the axis of the focus of the lens." This phrase might mean the centre of the field, or, as there is a focus on each of the countless secondary axes, it might imply some relation to these points. As, however, it subsequently states that this is the best portion of the lens for use, I should judge that the centre of the lens itself might be here intended, and that what was referred to was the fact that the central part of a lens, and not of its field, was here meant. In this sense the statement would be true, but would then be inconsistent with the subsequent part of the answer, as well as with the use of the word focus in the first line. In fact, I am quite at a loss to discover any rational signification in this passage which you have quoted consistent with its own phraseology and the known facts and terms of optics.

X Q. 37. Avoiding all hypercriticism and strained construction of language and casual omission of commas, please state whether you had any difficulty whatever in understanding the phrase I quoted, as you state in your answer you understand it, namely,
501 that the best portion of the lens for use is the centre of the lens itself?

A. So far from this being my natural construction, I cannot even now suppose that it was what Mr. Southworth meant; and if it was, it was a statement having no reference whatever to the subject under discussion, for the only case in which the properties of the centre of a lens, considered alone, would have anything to do with making a photograph, would be where a small diaphragm was used in contact with the lens, in which case, also, the edges of the field would be as much produced by the centre of the lens as would any other part; moreover, all elongation or distortion would equally come from this centre of the lens; and as the whole substance of the answer has reference to such distortion, etc., your interpretation of this phrase renders it irrelevant to the general substance of the answer.

X Q. 38. Further along in that answer I quote as follows: "A line drawn through the lenses at their centre, extending to the centre of the object of the picture, should likewise touch the centre of the plate upon which the object is pictured. * * * Any removal of the object and the lens from this centre line necessitates a change in the line of direction from the object to the lens, and from the lens to the plate upon which the image rests." Is this statement, in your opinion, correct?

A. It is.

X Q. 39. And would not such removal cause elongation or distortion of a picture which should thereafterwards be taken.

A. It would not occasion elongation of necessity, but might occasion such distortion as is shown in my Exhibit No. 8, which does not involve elongation, but, on the contrary, contraction, and is not due to spherical aberration, as implied by Southworth in this answer, but to what is known as aberration of thickness.

502 (The latter part of this answer objected to by complainants' counsel as irresponsive and an evident departure from the question.)

X Q. 40. Might not such removal, as stated in and quoted from the answer, produce elongation in the picture thereafter taken?

A. It might with certain forms of lenses, but this elongation, like the contraction shown in my Exhibit No. 8, would be insignificant in amount under the conditions involved in the present case.

X Q. 41. Referring now to defendants' record, pages 48–50, inclusive, I invite your attention to Exhibits Morton No. 4 and No. 5; please state whether those exhibits do not illustrate in the prints of the balls, other than the centre ball, such distortion and elongation as we have just been considering, and resulting also from substantially similar causes?

A. They do not, in any respect; in the first place, they are not produced by spherical aberration, nor by aberration of thickness, nor by any other error of a lens, nor by any relation of its central to its marginal portions, or to the difference of effect which it has upon rays passing along its principal axis, and along other axes, but would be more marked and conspicuous with an absolutely perfect lens, free from all such errors and irregular actions, than with any other. This distortion, as will be seen by reference to drawing Exhibit Morton No. 2, facing page 48 of defendants' record, is due, in the first place, to the fact that the bodies pictured are solids or spheres, having, therefore, equal dimensions of outline in whatever direction they are looked at, and not, therefore, being foreshortened in the direction of the line of view, when looked at obliquely, as would be the case with objects pictured on a flat surface, or distances between points essentially in a plane; in consequence of this the rays proceeding from the outline of these balls, whether through the centre of the lens or through
503 its margin, will be true cones just in proportion as the lens is accurate; and these cones being cut at right angles in the centre of the field, and obliquely at the margins by the sensitive plate, will produce in the first case circular, and the second elliptical, images.

Adjourned till Monday, April 10, 1876, 12 m.

New York, *April* 10, 1876—12 m.

Met pursuant to adjournment.
Present, counsel as before.

And the witness, Dr. Henry Morton, being further cross-examined by Mr. Abbott, says:

X Q. 42. Suppose the balls referred to in the last question had been arranged one above the other in a perpendicular line, instead of being arranged in a horizontal line, and photographs or pictures had been taken of them; would or not the result, as to the forms of the pictures, be substantially the same?

A. The elongation of the images of the outer balls would then have been in a vertical direction in place of a horizontal one; and, indeed, it may be given as a general rule that this elongation will be in a direction radial to the centre of the field. "otherwise the forms of the pictures" will "be substantially the same." In other words, the picture Exhibit Morton 4, placed with the row of balls vertical, would be the picture under the conditions I understand you to state, and if placed diagonally would be the picture produced by the same row of balls in a corresponding diagonal direction, always supposing that the centre ball remained in the centre of the field.

X Q. 43. And are the forms of the pictures of these balls such as they would appear to the eye to be if viewed from the same point of sight?

A. Under the following conditions: If the eye is placed in reference to this picture at a point corresponding to the optical centre of
504 the lens with which it was taken, the appearance which it will

then present to the eye will be substantially that which the balls themselves would present to the eye placed at the optical centre of the lens with which they were taken. There will then be no apparent distortion in the picture. This subject I fully discussed some eight years ago in an article in the Philadelphia Photographer, 1868, p. 383.

X Q. 44. When you took the negative of which Exhibit Morton No. 8 is a print, did you make use of a lens having attached to one end of the tube containing it an extension belt or rim, such as is usually screwed upon the end of the tube?

A. I did. I used the lens just as it was made, bought, and sold.

X Q. 45. Have you any personal knowledge as to the time when the lens you used was made or first used?

A. I have not.

X Q. 46. How early was it first used, so far as you have any personal knowledge?

A. About two years ago by some of the students in the Stevens Institute.

X Q. 47. Have you been accustomed to take photographs or daguerreotypes of living subjects? If yea, to what extent and when first?

A. About thirteen years ago I resided with my brother-in-law, Mr. John C. Browne, well known as an amateur photographer in Philadelphia, and was frequently with him and assisted in making photographs of persons in his own house in daylight and by the magnesium light at night, and also during the summer time in taking pictures out of doors, consisting often of groups or single figures with backgrounds of natural rock or buildings. I never made any daguerreotypes, and have never had occasion by myself to make photographs of living figures, 505 although I have frequently made photographs of various kinds in the course of my scientific work, or in connection with some patent suits.

X Q. 48. For how long a time did you assist your brother-in-law in the manner stated in your last answer?

A. For about two years; but for about six years afterwards I lived next door to him, and was frequently with him in photographic experiments; indeed, I think our experiments with magnesium light were made during this time.

X Q. 49. And was that your only or principal business during that time?

A. It was not. It was simply an amusement for leisure hours and during the summer holidays.

X Q. 50. Do you know when stops were first introduced into the smaller sizes, say $\frac{1}{4}$ and $\frac{1}{6}$ size, of portrait lenses, as introduced or used by you in taking the negative of Exhibit No. 8?

A. I do not, though it is my impression that a stop or diaphragm essentially such as I used was a very early introduction.

X Q. 51. Please state what meaning you attach to the word "essentially" in your last answer; and state also how early you have any knowledge of such stop or diaphragm as you used in taking said negative, and in the position and manner you used it, being used in taking pictures of living subjects with small-size lenses, say $\frac{1}{4}$ and $\frac{1}{6}$ sizes.

A. By "essentially" I mean placed about in the middle between the two sets of lenses of the "compound objective." A stop or diaphragm was used by Baptista Porta, the inventor of the camera-obscura, in the year 1650; but this was not employed by him with a compound lens, and therefore, of course, was under conditions differing in certain respects from that of the lens I employed. The theory of the compound

objective involves the use of a diaphragm; while, therefore, I cannot say from my own knowledge that a diaphragm was used with
506 any particular form of lens which I have not myself seen, I have no doubt that a diaphragm of some sort was employed with the earliest compound objective. By a diaphragm of some sort I mean a diaphragm either permanently fixed or capable of being taken out and replaced, as was the case with the one I used.

(All of the above answer after the words "compound objective" objected to by complainants' counsel as not responsive, not being called for by the question.)

X Q. 52. Suppose you were to use a lens for taking a picture of a background without a stop, how would such picture compare as to the shading-off or diminution of light from its centre with a picture from the same background taken with the use of a stop? I mean that the background in each case shall have the same relation to the lens as to its distance from the lens and as to its parallelism with the lens as it would have in taking a picture of a living subject and the stop to be of similar size and used in the same manner as in making the negative of Exhibit Morton No. 8.

A. In the first place, in order to try the experiment of taking a picture with a lens without any stop, it would be necessary, in my estimation, to construct a lens for the purpose, or to remove the stop from the lens as made and sold, as I have never heard of nor seen a photographic lens which had not a stop or diaphragm, either fixed or adjustable, connected with it. If this stop were removed, it might possibly make some difference in the shading-off, but it would then render the lens worthless for portraiture. Between a lens with such a stop as would render it fit for portraiture and the lens with the stop such as I used, I do not think there would be appreciable difference in shading-off.

X Q. 59. I repeat the same question, with this modification: instead of the phrase "without a stop," insert the following: Without any stop in the middle of the tube or in the position in regard to the lenses
507 as used by you in taking the negative of Exhibit Morton No. 8.

A. It seems to me that the drift of your question will be best answered by the following statement: The negative which I first made of this same background was made without any stop except such as was permanently fixed in the lens. The lines were very much blurred through spherical aberration, but the shading-off towards the edges was essentially the same as is shown in Exhibit Morton 8. This much I can answer from my knowledge. As to what would happen under your supposed conditions with some other lens, I can only conjecture, though my belief is that the introduction of a smaller stop in any lens would have little influence on the shading-off of the field, as this is essentially due to the loss by deflection of rays passing obliquely through the lens as compared with those passing directly or axially, on which the stop would have no influence.

X Q. 60. In taking the negative of Exhibit Morton No. 8 was there any stop or diaphragm at the rear end of the lens or between the lens and the negative or plate?

A. There was not.

X Q. 61. Suppose, instead of a stop being placed as you did, it had been placed in front of the lens, against the shoulder of the belt or rim before spoken of—that is, on the inside of the rim, and quite near to the lens—and the picture of the background then be taken, how would it then compare in its shading-off towards the exterior field of the lens as compared with the shading-off in the picture made by the use of a diaphragm, as you did in making the negative of Exhibit Morton, No 8, the aperture in the diaphragm to be the same in both cases?

A. I have never made such an experiment, but from an observation which I make at this moment with the camera and lens, Com-
508 plainants' Exhibit 46, I should think that it would greatly increase the shading-off.

X Q. 62 (de bene). Your second answer in this deposition relates to the Southworth patent involved in this case. I suppose before giving that answer you had read and carefully examined the complainants' printed record, and particularly pages 26 to 38 inclusive. Am I right?

A. Not entirely. The part which I examined in this connection is included on pages 32, 33, 34, and 35, and the answers of Southworth, which I quoted on pages 57 and 58.

X Q. 63 (d. b.). Had you not before that answer carefully read the pages referred to in X Q. 62 (d. b.) above—that is, 26 to 38 inclusive?

A. I had not read pp. 26, 27, 28, 29, 30, and 31, except the last four lines of the latter, the question asked me having reference, as I understood, to the letters patent of Albert S. Southworth, given essentially on pages 32, 33, 34, and 35; this was the only part which I read over. But if it is desired, I will now read the previous pages, and make my answer in reference to them as well.

X Q. 64 (d. b.). In this deposition, fol. 757, you say, "I find that, in the first place, the aperture to receive the plate-holder is at the top of the box, in place of being at the sides." Referring now to the camera used by Wing, Complainants' Exhibit 46, and referred to by you above, please state whether in taking photographic pictures with it, turning the same on its side, there would be any difference in the result as compared with taking pictures with a similiar camera, with the exception of having the aperture at the side of the box, as the box described by McKown?

A. This would depend upon the shape and construction of the box and plate-holder. If the box were longer than it was high, sliding the plate-holder through a hole cut at the side would give a greater
509 range of movement. Exhibit 46, however, when turned over on its side, will answer very fairly to repeat the experiment of McKown, as I have shown in my answer to direct interrogatory 5.

X Q. 65. Will you please give the length of the slide as drawn by you and shown in "Fig. 2 C′ D′"?

A. Two inches and seven-sixteenths ($2\frac{7}{16}$ ins.).

X Q. 66. And now the length from the right edge to the aperture?

A. 1 and $\frac{1}{4}$ inches.

X Q. 67. The width of the aperture?

A. $\frac{7}{8}$ of an inch.

X Q. 68. And then from the aperture to the other end of the slide?

A. $\frac{1}{4}$ of an inch.

X Q. 69. And will you now give us the corresponding measurements of the slide with which Complainants' Exhibit 47 was made?

A. The whole effective length of the slide, as corresponding to the slide represented by me, is $5\frac{1}{4}$ inches. There is besides this an inch and a half on the left-hand part of the slide, which has nothing corresponding to it in my drawing, since my drawing represents the slide simply as filling the opening of the plate-holder, and with nothing besides this except a handle on one side. The distance from the right-hand edge to the aperture is one inch and five-eighths ($1\frac{5}{8}$ in.). The width of the aperture is two inches, and the effective width of the slide on the other side is $1\frac{5}{8}$ inches (inch and five-eighths), leaving out of consideration, of course, the inch and a half ($1\frac{1}{2}$ inches) or thereabouts, which is simply a continuation of the slide beyond the aperture of the plate-holder. It is thus evident that when this slide is pushed in all the way, its aperture is practically in the middle of the available space or opening of the plate-holder, while the slide represented in my drawing has its aperture entirely to the left-hand of the centre of the available space in the plate-holder.

510 X Q. 70. Suppose pictures, two on a plate, were to be taken with the use of a Bellows camera, and in the manner described by you in your answer under consideration, would either of the two pictures be taken in the centre of the field of the lens?

A. Not if made strictly according to this description. If a very small picture limited by a small diaphragm were taken, 2 might be produced, each in the centre of the field, but this would not be consistent with the statement of McKown that the aperture C D exposed about half the plate.

(Complainants' counsel objects to all the above answer after word "description" as a departure from the question.)

X Q. 71. If an attempt were to be made to take pictures in the manner you have described in this answer, would there not be a difficulty in accomplishing the object by the action of the light, while taking the first picture, passing around or by the end of the plate-holder?

A. Not if the camera had the hole cut in its side as McKown describes, and the photographer (as I believe is the universal practice) threw his focusing-cloth over the rear of the camera when making the exposure. With the camera Exhibit 46 turned on its side, the open base-board being turned vertically would make this much more difficult to accomplish.

X Q. 72. And would not there be difficulty also by the light passing between the slide in the plate-holder and the nearest part of the box in front of it?

A. None but what the same use of the focusing-cloth would easily overcome, as, indeed, is made evident by the fact that Mr. Wing was able to prepare Exhibit 47 with the use of this camera and apparatus, evidently without being incommoded by such difficulties, as the picture itself shows no ill-effect from such causes as you have alluded to.

511 X Q. 73. If two pictures were taken on one plate in the manner described by Mr. Wing in answer to interrogatory 74, complainants' record 102, would not each of the two pictures be taken in a part of the field of the lens bearing the same relation to the centre of the field of the lens as they would if taken in the manner you have described in your answer now under consideration, and would there be any difference in this respect, excepting that in Exhibit No. 48, the pictures are taken respectively the one at the right and the other at the left of a vertical line passing through the centre of the field of the lens, whereas by your mode they would both be taken upon one and the same side of such vertical line?

A. In the mode which I have explained as described by McKown, the two pictures would, as you have said, be both taken on the same side of the field of the lens; but, besides this, the external conditions remaining the same—that is, position of sitter, light, etc.—they would be absolutely identical. In the other case, the two pictures, besides being taken on different sides of the centre of the field, would be taken from different points of view, unless, which is exceedingly unlikely to be the case, the camera was so moved as to turn round a vertical axis passing through the optical center of the lens. Of course, also, any slight error in setting down the feet of the camera-stand in changing its position would render the pictures unsymmetrical as regards the distance of their centres from the centre of the field, and that side of the subject which was the nearest to the center of the field in the one picture would be most distant in the other.

X Q. 74. Suppose two pictures were taken on the same plate in the manner described by you in your answer under consideration, and were placed in a stereoscope; would distortion or stereoscopic effect be seen?

A. If the sitter remained absolutely without movement, no ste-
512 reoscopic effect would be produced, and the stereoscope would
show nothing in reference to distortion, whether it existed or
not.

X Q. 75. Would there be in fact distortion in each of the pictures referred to in the last question?

A. There would.

Adjourned to April 11, 1876, 10 a. m.

NEW YORK, *April* 11, 1876.—10 a. m.

Met pursuant to adjournment.

Present, counsel as before.

And the witness, Dr. Henry Morton, in answer to further cross-interrogatories propounded by Mr. ABBOTT, says:

X Q. 76. Suppose four pictures of an immovable, solid object, as of a bust, for example, to be taken upon the same plate with Southworth's patented plate-holder, each in the centre of the field of the lens, with the plate arranged vertically and perpendicularly to the axis of the lens; would any two of these pictures mounted in any way for the stereoscope, give or present stereoscopic relief?

A. I should suppose not, as I understand the question, though as Southworth himself says in his patent that "stereoscopic pictures may be thus taken with a suitably arranged camera," there may possibly be some means unknown to me for producing such an effect.

X Q. 77. Suppose the pictures taken as stated in the last question, and without any movement whatever of the camera, would any two of the pictures, however arranged for the stereoscope, show any stereoscopic effect?

A. I think not.

X Q. 78. Suppose two pictures taken by two lenses, one directly above
the other, of an immovable, solid object, as of a bust for exam-
513 ple, or by raising or lowering or by tipping the camera vertically,
or by not moving the camera but tilting the figure—in either such
supposed case if the pictures were arranged for the stereoscope side by side, with the heads at the top, would there be any stereoscopic effect seen?

A. There would not. I come to this conclusion as the result of the experiments which I have tried, and described in my examination in chief, as well as from general considerations as to the cause of stereoscopic effect, and from the authority of standard authors.

X Q. 79. To what standard authors do you refer?

A. Sir Charles Wheatstone, Sir David Brewster, Professor O. N. Rood, Professor Charles F. Hines, and there are one or two others whose names I cannot this moment recall.

X Q. 80. Suppose two pictures taken in each of the modes stated in 78 cross, if arranged for the stereoscope with the vertical lines placed horizontally, same as in Exhibit Morton No. 18, would they not in each case show stereoscopic effect ?

A. With the exception of the third case—that is, the tipping of the camera—they would. But in this case the point of view not being changed of necessity, they might very well fail to give any stereoscopic effect.

X Q. 81. Please refer to folios 842 to 848 inclusive, commencing with "Defendants, No. 10," and ending with "which he names." Before the commencement of this part of your answer, were you not informed by me, in presence of one of defendants' counsel, that said Exhibit No. 10 had not been in possession of Mr. Southworth, and that in his answer to which you were referring, he spoke of the other exhibits of the Pratt boy, which had been presented to him, and to which his attention was particularly called in the question which he answered ; and did not one of defendants' counsel at that time assent to the correctness of this statement ?

514 A. I had answered the question, up to the point of the end of the paragraph in folio 845, before anything was said on the subject. You then made some explanation to Mr. Thompson, from which I understood that Mr. Southworth had combined in his answer referred to, reference to other exhibits in addition to No. 10, and in consequence of this I drew attention at the beginning of the next paragraph to Mr. Southworth's own statement, that he found such and such appearances in Exhibit 10, and the question asked of me being in reference to Mr. Southworth's statement, and not in reference to anything else, I considered that I was bound to answer in reference to this in the first place; but when, from my discussion of his statement, I had made it fully appear that it was impossible to reconcile his statements as to the features observed with his first statement that Exhibit 10 was the subject examined, I drew attention to this fact in a paragraph at the end of folio 847, and in the rest of my answer assumed that he had reference to the Complainants' Exhibit 31, which appeared to correspond with his statements more fully than any other exhibit in the case.

X Q. 82. Please examine Exhibit 12, and state whether the outlines of the plate on which the four pictures of Mrs. Haas were taken are not visible ; and, if so, please give the size of the plate.

A. I think they are visible ; and the size of the image of the plate is about 3 and $\frac{3}{16}$ inches high and about 2 and $\frac{3}{4}$ inches broad.

X Q. 83. Will you please measure and give the width of the rabbet in the frame in which the plate is put in Defendants' Exhibit No. 8 ?

A. Premising that this exhibit shows on its face that it is not a working model, but a mere illustration of the general construction or movement by which the pictures of Mrs. Haas were taken, I find the depth of the rabbet to be about $\frac{3}{16}$ of an inch.

X Q. 84. And what would be the size of the plate for this frame ?

515 A. Three and $\frac{1}{4}$ inches high by 2 inches and $\frac{13}{16}$ wide.

X Q. 85. Is not the width of this rabbet as wide as usual in frames for plates of such size ?

A. I have no acquaintance with daguerreotype apparatus, and as this represents an apparatus used in making daguerreotypes, I am not able to say.

X Q. 86. In taking photographic pictures do you not often have plates inserted in such frames ?

A. Not at all like this. A photograph could not readily be taken effectively in such a frame except by the dry-plate process, which I have never practiced.

X Q. 87. In taking photographic pictures is not the plate placed, or frequently placed, in a frame having rabbets, on which it is placed?

A. In a certain sense, yes; but the plate never lies in the rabbet, but is supported by "corners" of glass, hard rubber, or other material.

X Q. 88. And in such case only the corners of the plate would thereby be covered; would they?

A. No; the sides or edges, but not of necessity in proportion to the depth of the rabbet.

X Q. 89. And what is the usual depth of the rabbet in such cases?

A. I never measured one; but I suppose from a quarter to a half of an inch.

X Q. 90. Have you any recollection or belief that in a frame for practical use to contain a plate of the size that you believe was used for the original daguerreotype of which Exhibit 12 is a copy, the depth of the rabbet was more than $\frac{1}{4}$ of an inch.

A. As I have explained in a previous answer, I consider that Exhibit 12 itself demonstrates, by certain indications, that its original must have been taken with a plate-holder covering its outer edge up to the margins of the pictures. On this, which is my only knowledge in the case, is founded a very strong belief that such a plate-holder was used.

At the time this picture was deposed to have been taken I
516 was not cognizant of any such matters, but I can see no reason
why, in an apparatus specially fitted up by a photographer for his own use, a rabbet of any depth, which other considerations lead us to look for, should not have been made.

X Q. 91. Please give the depth of rabbet in frame, Complainants' Exhibit No. 15, and the size of the plate for that frame.

A. The depth of the rabbet is a little over an eighth of an inch, and the frame would admit a plate of about $3\frac{1}{4}$ inches high by $2\frac{13}{16}$ inches wide.

Adjourned to—

517 NEW YORK, *December* 12, 1876—11 a. m.

Met pursuant to notice.

Present, counsel as before.

MRS. EVELEEN PRATT, a witness produced on the part of the defendants, being first duly sworn, in answer to interrogatories propounded by MR. BLAKE, says:

Q. 1. What is your name and residence?

A. Eveleen Pratt; I reside in Augusta County, Virginia.

Q. 2. Are you the wife of William A. Pratt?

A. Yes, sir.

Q. 3. Please look at Complainant's Exhibit, No. 40, and state what it is.

A. It is a picture of my son, George Julian Pratt, here by my side.

Q. 4. What was his age when it was taken?

A. Four years.

Q. 5. On what occasion was it taken?

A. On his fourth birthday.

Q. 6. Where was it taken?

A. In the city of Richmond, Virginia.

Q. 7. How was it taken?

A. It was taken by the process of taking four on a plate—by moving the plate three times. The plate was put in and then moved three times.

Q. 8. Have you with you anything which shows what this apparatus was?

A. I have a simple paper with me by which, I think, I can show you what it was.

Q. 9. Please produce it and explain what the operation was.

A. I produce it. The plate "A" was prepared for taking the picture. "B" is what the plate is moved with, and it fitted in "C" very nicely together with the plate. When together, they were placed in the box together, and the first picture was taken. The next process was to slide it down and take the second picture; the third picture was
518 taken by sliding it to one side, and the fourth was taken by the
plate being moved up. The plate was moved by a handle of tin, I think, or some suitable material.

(Paper model offered in evidence and marked Complainant's Exhibit, "Eveleen Pratt," B. T. V., sp. ex.)

Q. 10. Did you ever see your husband use this apparatus?

A. Yes, sir.

Q. 11. Were you present when the picture, of which Complainant's Exhibit No. 40, is a copy, was taken?

A. Yes, sir.

Q. 12. Do you remember anything that was said at the time?

(Objected to as inadmissible and calling for hearsay.)

A. I only remember taking my son in and asking the picture to be taken, and when the picture was brought out to me, and when it was held up before my son he exclaimed: "That picture is for you, ma'ma, because I smiled when it was taken. I wish that picture particularly for you."

Q. 13. Please show on Complainant's Exhibit 40, which picture he spoke of.

(Same objection.)

A. The lower left-hand picture.

Q. 14. Do you remember any other pictures your husband took with this apparatus, and, if yea, what were they?

A. I do; they were many of my own family and my friends. I recognize Complainant's Exhibit No. 21, which is a picture of my husband's mother, as having been so taken.

Q. 15. Referring to 1850 or 1851, do you remember any pictures he took with this apparatus in those years?

519 A. In 1851 he took the pictures of the convention in Richmond, Virginia.

Q. 16. Did you ever render your husband any assistance with reference to pictures which were taken in this manner, after they were finished?

A. Yes, sir; often.

And being cross-examined by Mr. ABBOTT says:

X Q. 17. What is your age?

A. I am 57 years of age. I was born on the 14th September, 1820.

X Q. 18. When and where were you married?

A. I was married on Malcolm's Island in the Potomac. I was married on the 17th day of June, and would have been 18 years of age the following September.

X Q. 19. Where did you and your husband commence living after your marriage?

A. On that same island.

X Q. 20. How long did you continue to live there?

A. Six months, to the best of my knowledge.

X Q. 21. To what place did you then move, and how long did you reside there?

A. We moved to Washington City, and resided there about six months. Then we moved to Green Mount Cemetery, near Baltimore, and resided there about six months. We then moved into the city of Baltimore, where we resided, to the best of my knowledge, about two years. We moved from Baltimore to Frederick City, Maryland; we resided there to the best of my knowledge not more than nine months. We then moved to Alexandria. I cannot say how long exactly we made it our home. We were traveling a great deal and left our effects there. I can't exactly say how many years we made Alexandria our home. Then we moved to Richmond. We established ourselves there in December, 1846. I don't recollect the year we left there. We must have been there a great many years. My two youngest sons were born there, and the youngest ran around and talked when we left. We then 520 moved to the University of Virginia. I would not like to say exactly how long; I think we were there from eight to ten years. We then moved to the town of Charlottesville; we resided there about two years. We then moved to Sta'nton, Virginia; we resided there about six or seven years. We then moved to the Walnut Grove farm, about twelve miles from Sta'nton. We have resided there a little over a year, and reside there now.

X Q. 22. When you stated in your last answer, that "we established ourselves there in December, 1846," you referred to a written memorandum, did you not, for your answer?

A. I did. The whole memorandum that I held is the words and figures following:

"Eveleen Pratt, born Sept. 14, 1820.
"Wm. A. Pratt, born March 7, 1818.
"Julian Pratt, born March 6, 1843.
"Gallery opened December, 1846.
"Quad. of Julian, taken March 6, 1847.
"Convention taken in 1850–1851.
"Patent granted, April 10, 1855."

This memorandum is in my husband's handwriting. He wrote it, I think, last week. I can't say what day; he wrote it at the Walnut Grove farm, Augusta County. I was not present when my husband wrote it. I think he gave it to me last Thursday.

X Q. 23. What patent is referred to in the last line of that memorandum?

A. I don't know that I know.

X Q. 24. Is it a patent granted to your husband?

A. No; not that I know of.

X Q. 25. Did you ever see the patent?

A. Never.

X Q. 26. Please give the names of all of your children, and the dates of their births, as nearly as you can?

A. I can give you the names but not the dates of their births, without referring to the Bible record, except that of George Julian. 521 The names are, Mary Eveleen Pratt, George Julian Pratt, William Abbott Pratt, Charles Evelyn Pratt. These are all that were named. Two others died before they were named. Mary Eveleen is not living; she died when George Julian was about nine months old. He was born March 6, 1843.

X Q. 27. Can you tell how old he is?

A. He was 33 last March. William Abbott Pratt was 25 the 16th day of last June, to the best of my knowledge. To the best of my knowledge, Charles Evelyn Pratt will be 24 the 27th day of this month.

X Q. 27. When and where did your husband first commence taking pictures ?

A. He first commenced taking pictures in the town of Alexandria. I have no recollection of the exact date.

X Q. 28. How long was it before you moved to Richmond ?

A. I don't recollect.

X Q. 29. Can you state in what year your husband commenced taking pictures in Alexandria ?

A. I have said I could not.

X Q. 30. The year before he established himself in Richmond, were you and he living in Alexandria, or were you traveling, but having your things and home in Alexandria ?

A. I said we had our things in Alexandria and we were traveling.

X Q. 31. During that year—I mean the year before Mr. Pratt established himself in Richmond—did he have any gallery or place in Alexandria in which he took any pictures during that year ?

A. I don't recollect.

X Q. 32. Where were you and he travelling during that year, and in what was Mr. Pratt engaged ?

A. I don't recollect exactly where. He was engaged in taking pictures.

522 X Q. 33. Can you give the name of any place in which he took any pictures during that year.

A. No. I would not like to say positively that I can state any particular place.

X Q. 34. When Mr. Pratt was traveling and taking pictures, did you go with him or remain in Alexandria ?

A. Sometimes I remained, and sometimes I went with him.

X Q. 35. When you went with him and he took pictures, were they taken in some building or room, or in a saloon that was moved from place to place ?

A. They were taken in the most suitable place in the town or city where he went, that he could get ; not in a movable saloon.

X Q. 36. I now call your attention to the paper model, referred to in your 8th and 9th answers. Please state when and where it was made ?

A. About two weeks ago. I cut them out at Walnut Grove. My husband was present. I don't know whether my husband made the pencil lines on the part marked "C." I don't know when those lines were made. I do not recollect whether those lines were made before the opening was cut. I do not recollect whether I made those pencil lines or not. I do not know who wrote the word "bottom" on the part marked "C," nor did I see it written. It was on before I came here. I would not like to testify who wrote the word "slide" on the opposite side of "C." It was on there before I came here.

X Q. 37. I now refer to the part of the paper model marked by the examiner "B." When and by whom were the lines, words, and other pencilings made, which appear on each side of this paper ?

A. To the best of my knowledge the pencil lines, the words, &c., were made by my husband. I did not see him make them.

X Q. 38. And he cut or clipped the corners of this paper, did he not ?

A. I do not know.

523 X Q. 39. Now, please refer to the part of the paper model marked by the examiner "A," and state when and by whom the lines and figures in pencil upon this paper were made ?

A. I did not see them made. They were made before I came here.

X Q. 40. You cut the opening in the pasteboard "C," did you not?

A. I do not know that I did.

X Q. 41. Do you not know whether you made that opening or not?

A. No, sir. I do not know who sewed on the envelope on the part marked "C." The hole was cut and the envelope was sewed on before I left Walnut Grove.

X Q. 42. Are you acquainted with Mr. J. H. Tompkins, of Grand Rapids, Michigan?

(Objected to as irrelevant)

A. I have seen him. I never saw him but once; that was, about three years ago, as far as I can recollect. I saw him at my own house in Staunton.

X Q. 43. Have you received any letters from him or seen any letter from him to your husband?

(Same objection.)

A. I received a note last summer from Mr. Tompkins. I don't recollect of reading any letters from him to my husband. I don't recollect of receiving any letters from him since last summer.

X Q. 44. Can you safely say that you have not received from said Tompkins any letter or note since you received the one above referred to?

(Same objection.)

A. I decline to answer.

524 X Q. 45. I notice that the memorandum which is copied in answer to 22nd cross-question, appears to be written on a folded letter. Is not that a letter (I refer to the inside) from Mr. Tompkins?

(Same objection.)

A. I decline to answer.

X Q. 46. At the time when you state that your husband took the picture of your son referred to in your 3rd answer, had he a gallery or room in Richmond in which he took pictures?

A. Yes, sir; he had a gallery.

X Q. 47. How far was that gallery from the place where you then lived?

A. I lived in one part of the same house.

X Q. 48 (de bene). In your 12th answer you say, "when the picture was brought out to me, and when it was held up before my son, he exclaimed, &c." Where were you when the picture was held up before your son as stated, I mean in what room?

A. In the room in which it was taken.

X Q. 49 (de bene). How long was this after it was taken?

A. I don't recollect how many moments it took to expose it over the chemicals and then to wash the picture, and to bring it out into the room and to show the picture.

X Q. 50. How many cameras did your husband have in that gallery at and about that time?

A. I don't recollect how many stood in the room at the time.

X Q. 51. What convention do you refer to in your 15th answer?

A. The Virginia convention. I do not remember what the convention was called for.

X Q. 52. In what business has your husband been engaged during the present year?

A. No business.

X Q. 53. When did he finish or close his business of taking pictures?

525 A. I can't give you the date.

X Q. 54. Please state how long ago, to your best recollection.

A. To the best of my knowledge he ceased to take pictures twenty years ago.

X Q. 55. Where was he living or doing business at that time?

A. To the best of my knowledge he gave up when he left Richmond.

X Q. 56. In what business has he been engaged since?

A. In the architectural business.

X Q. 57. In your 14th answer you refer to other pictures which you say your husband took with the apparatus you have described. Can you produce any specimen of such pictures, four on a plate, except what are already in this case?

Adjourned to December 13th, 1876, 10 a. m.

NEW YORK, *December* 13, 1876—10 a. m.

Met pursuant to adjournment.
Present, counsel as before.

And the witness, Mrs. Eveleen Pratt, in answer to cross-interrogatory No. 57, propounded yesterday by Mr. ABBOTT, says:

A. Not now.

X Q. 58. Can you give the name and place of residence of any person who has any plate with four pictures on it, made by your husband, excepting the pictures already produced?

A. No, sir. I wouldn't say that I could.

X Q. 59. Please state as accurately as you can, the time when your husband first made four pictures on a plate.

526 A. I don't wish to go back of the picture of my son Julian, which I saw taken.

X Q. 60. Do you know of his taking four pictures on one plate at any time before taking the picture of Julian, already referred to.

A. I would not like to testify to anything as I said before, only just that of Julian's picture.

X Q. 61. Can you give the name and place of present residence of any person who was in the employ of your husband, or who assisted him at any time when he took four pictures on a plate?

A. No, sir; I cannot.

And being further examined by Mr. BLAKE, says:

R. D. Q. 62. Will you please produce and annex to your deposition the memorandum of dates which you had in your hand while you were testifying yesterday?

A. I will and I do.

(The memorandum and the letter marked Exhibit "Eveleen Platt No. 2, B. T. V., spec. ex.")

R. D. Q. 63. From whom did you receive the exhibit, "Eveleen Pratt"?

A. It was prepared partly by myself and partly by my husband.

R. D. Q. 64. Which part did you prepare, and which part did your husband prepare?

A. To the best of my recollection I cut the piece of box lid and brought it to him, and, to the best of my recollection, I cut the pieces of paper, sewed on to the paper marked "B," and which is intended to represent a handle.

R. D. Q. 65. Did he ask you anything in regard to the mode of operation of this model; and if he did, state what he said and what you said and did?

(Objected to as calling for hearsay, as incompetent, and inadmissible in redirect.)

527 A. He asked me to show him how the plate was moved, which I did. And he said that was right.

R. D. Q. 66. Were the marks in pencil on it when you did this?

A. I don't remember whether they were all there or whether they were not. I don't recollect about them.

R. D. Q. 67. You have had correspondence with Mr. Tompkins and with me, have you not, regarding this matter?

(Objected to as leading and inadmissible in redirect.)

A. Yes.

R. D Q. 68. The letter on the 3d page of the memorandum is a copy of a letter which was written to me, is it not?

A. It is.

R. D. Q. 69. I wrote you that I would pay you the hundred dollars, did I not?

A. Yes, sir.

R. D. Q. 70. Your correspondence with Mr. Tompkins was regarding your testimony in this case, was it not?

A. Yes.

EVELEEN PRATT.

Sworn and subscribed to before me this 13th day of December, 1876.

B. T. VETTERLEIN,
Special Examiner.

528 **George Julian Pratt**, a witness produced on the part of the defendants, having been duly sworn, in answer to interrogatories propounded by Mr. Blake, says:

Q. 1. What is your name, age, residence, and occupation?

A. George Julian Pratt; I am 33 years of age; I reside at Walnut Grove farm, near Waynesboro', Augusta County, Virginia; I am a farmer.

Q. 2. Please look at Complainant's Exhibits 10 and 11, and say if you ever saw the picture of which it is a copy, and whose picture it is?

A. Yes, sir; I have seen it frequently. It is a copy of myself when four years of age.

Q. 3. Did you ever see your father make pictures in the manner described in Mrs. Pratt's testimony? If yea, how old were you when you first saw it?

A. I did before I was eight years old and up to that time.

Q. 4. How frequently did you see him do so?

A. I was a great deal in his gallery, frequently spending the larger part of Saturday when I was not at school, and I have repeatedly seen him take pictures in the way described.

Q. 5. Did you hear a conversation between your father and Mrs. Pratt, regarding the model exhibit, "Eveleen Pratt"; and, if you did, state what he said, and what she said and did?

(Objected to as incompetent, inadmissible, and calling for hearsay testimony.)

A. I did hear a conversation; I was in the room with my father and
wife when mother came in, and this model was presented to her by my
father, and she was asked to show him the method of its operation.
We all felt some anxiety to see whether she would remember, and consequently paid close attention. She took the model from him,
529 designated the parts, and proceeded at once to show him the
method, when he exclaimed, "That is right, exactly."

Q. 6. Did he assist her in showing the method; and, if so, what did he say?

A. He did not.

Q. 7. Where are the men who worked in your father's gallery when you first began to go there?

A. Mr. James Ellis, I am informed, is dead, and Richard Sanxay I know to be dead. There were no other operators employed.

Q. 8. Look at the marks on the exhibit, "Eveleen Pratt," and say if you recognize the hand that made them, and who was it?

A. As to the marks, I could not of course identify them; the writing appears to be that of my father.

Cross-examination waived.

G. JULIAN PRATT.

Sworn and subscribed to before me this 13th December, 1876.

B. T. VETTERLEIN,
Special Examiner.

Defendant's counsel gives notice that he here rests.

530 APPENDIX 1.

United States circuit court, southern district New York.

SIMON WING, ET AL.
vs.
ANTHONY, ET AL.

Defendants' Exhibit No. 1.—E. G. T., ex'r.

Albert S. Southworth, of Boston, Mass. Letters patent No. 12700.
Dated April 10, 1855.

To all whom it may concern:

Be it known, that I, A. S. Southworth, of Boston, in the county of Suffolk, and State of Massachussetts, have invented a new and useful plate-holder for cameras for taking photographic impressions, of which the following is a full, clear, and exact description; reference being had to the annexed drawings, in which—

Fig. 1, is a front view.
Fig. 2, a rear view.
Fig. 3, a similar view, the cover being dropped into a horizontal position.
Fig. 4, a vertical section through the center.
Fig. 5, an end view.
Fig. 6, details which will be referred to hereafter.
Fig. 7, the slider.

531 In taking daguerreotypes of small size for lockets, it often occurs that the first picture taken is not properly timed, or ex-

posed to the light, and a second or a third is required to be taken before a perfect picture is obtained; each picture thus taken requires a freshly prepared plate, which causes a considerable consumption of time.

The object of my invention is to bring in rapid succession different parts of the same plate, or different plates, of whatsoever material prepared for photographic purposes, into the centre of the field of the lens, for the purpose of either timing them differently, that the most perfect may be selected, or of taking different views of the same object, with the least delay possible; or of taking stereoscopic pictures upon the same or different plates, with one camera.

My invention consists in a peculiarly arranged frame in which the plate-holder is permitted to slide, by which means I am enabled to take four daguerreotypes upon one plate and at one sitting; different portions of the plate being brought successively opposite an opening in the frame, the opening remaining stationary in the axis of the camera, while the plate-holder and plate are moved.

The frame, which guides the motion of the plate-holder, is constructed as follows: A is the front plate, immediately in the rear of which is a zinc plate B; in the center of this plate is the hole C (seen in blue in Fig. 2), which is closed by the zinc slider D (Fig. 7), in the customary manner. Around the borders of this frame are the strips E, seen in section in Fig. 4, and in dotted lines in Fig. 1. The rear plate F, of this frame, is hinged to one of the strips E, at *b*; between this plate and the zinc plate B, and within the space enclosed by the
532 strips E, slides the plate-holder, which is constructed as follows:
G is the frame of the plate-holder, into the rectangular opening of which is inserted the daguerreotype plate, seen in red in Figs. 2 and 4, and in dotted lines in Fig. 1. The back plate H, rests against the daguerreotype plate and holds it in place. The plate-holder thus constructed, is allowed to take four different positions within its carrying-frame so as to bring the four different portions 1, 2, 3 and 4, Fig. 2, of the plate successively opposite to the opening *c*; it is guided in its motions in the following manner: I is a block attached to the back plate of the plate-holder, which projects through a rectangular opening K, in the hinged plate F; the block I is moved in succession into the four corners of the opening K, by which means the four different portions of the daguerreotype plate are brought opposite to the opening C.

The motions of the block I are regulated by the guide L, hinged to the plate F at *d*—when this block is in the position seen in Fig 2, the block I rests upon its top edge, and one corner of the daguerreotype plate (3) is opposite to the hole *c*; when the block I is slidden to the opposite corner of the opening K, still resting upon the piece L, another portion (4) of the daguerreotype plate is brought opposite the opening C. The guide-piece L is then thrown back as seen in Fig. 4, and the block I is allowed to drop into the right hand lower corner of the opening K, the block I as it descends being guided by the edge *a*, and the portion (1) of the daguerreotype plate is brought opposite the opening C.

By another movement the block I is thrown into the left-hand
533 corner of the opening K, the block I sliding in the channel *e*,
when the portion (2) of the daguerreotype plate is exposed to the opening C. I am thus enabled to take four impressions upon different portions of the same plate. These may be miniatures of the same person taken, as before stated, for the purpose of selecting the best for a locket; or they may be different views of the same face, taken upon

the same plate for the purpose of preserving them together, or they may be daguerreotypes of different persons as different members of a family; or, lastly, stereoscopic pictures may be thus taken with a suitably arranged camera.

It is evident that, as the frame A B remains stationary, the opening C, when once placed in the axis of the camera, will not change, and the successive pictures will all be taken with equal correctness, and the changes are so quickly made that the aperture of the camera need not be covered from first to last, unless different positions or different objects are taken.

The guide-piece L, or some equivalent thereof, is absolutely essential as the attempt to hold the block I by hand would shake the camera or move it from its normal position whilst the picture was being taken.

Heretofore I have spoken of the above contrivance as calculated to take four pictures upon the same plate; it is evident, however, that it may be so arranged as to take any desired number, as six or eight for example, without departing from the principle of my invention.

CLAIM.—What I claim as my invention and desire to secure by letters patent, is—

534 The within described plate-holder, in combination with the frame in which it moves, constructed and operating in the manner and for the purpose substantially as herein set forth.

ALBERT S. SOUTHWORTH.

Witnesses:
SAM. COOPER,
JOHN S. CLOW.
Ex'd., S. B. E.

Defendants' Exhibit No. 2.—E. G. T., ex'r.

The U. S. Patent Office to all persons to whom these presents shall come, greeting:

This is to certify that the annexed is a true copy from the records of this office of the letters patent granted Isaac Van Bunschoten, dated April 17th, 1849, No. 6357, for "improvement in daguerreotype apparatus for panoramic views."

In testimony whereof I, M. D. Leggett, Commissioner of Patents, have caused the seal of the Patent Office to be hereunto affixed, this sixteenth day of September, in the year of our Lord one thousand eight hundred and seventy-three, and of the Independence of the United States the ninety-eighth.

[SEAL.]

M. D. LEGGETT,
Commissioner.

535 No. 6357.

The United States of America to all to whom these letters patent shall come:

Whereas Isaac Van Bunschoten, John G. Woodbridge, and William Mann, of New York, N. Y., have alleged that they have invented a new and useful improvement in daguerreotype apparatus for panoramic views (said Woodbridge and Mann having assigned all their right, title, and interest in said invention to Isaac Van Bunschoten), which they state has not been known or used before their application; have made oath that they are citizens of the United States; that they do verily believe that they are the original and first inventors or discoverers of the said improvement; and that the same hath not, to the best of their knowledge and belief, been previously known or used; have paid into the Treasury of the United States the sum of thirty dollars, and presented a petition to the Commissioner of Patents signifying a desire of obtaining an exclusive property in the said improvement, and praying that a patent may be granted for that purpose:

These are, therefore, to grant, according to law, to the said Isaac Van Bunschoten, his heirs, administrators, or assigns, for the term of fourteen years from the seventeenth day of April, one thousand eight hundred and forty-nine, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used, the said improvement, a description whereof is given in the words of the said Van Bunschoten, Woodbridge, and Mann in the schedule hereunto annexed, and is made part of these presents.

536 In testimony whereof I have caused these letters to be made patent, and the seal of the Patent Office has been hereunto affixed.

Given under my hand, at the city of Washington, this seventeenth day of April, in the year of our Lord one thousand eight hundred and forty-nine, and of the Independence of the United States of America the seventy-third.

T. EWING,
Secretary of the Interior.

Countersigned and sealed with the seal of the Patent Office.
[L. S.] EDMUND BURKE,
Commissioner of Patents.

The schedule referred to in these letters patent and making part of the same.

To all to whom these presents may come:

Know ye that we, Isaac Van Bunschoten and John G. Woodbridge, daguerreotypists, and William Mann, tinman, all of the city of New York, have invented and made and applied to use, certain new and useful improvements in the application of mechanical means to the camera used with the daguerreotype apparatus, such improvements effecting the taking representations of figures, buildings, scenery, or other objects of any kind in successive parts, each of which parts matches the precedent part on one plate, thereby avoiding distortion or disproportion of the parts (now caused in plates of more than certain sizes), by the divergent rays of the reflected light as they spread on the surface of the plate itself, and place portions of the objects repre-
537 sented either out of their true shape or proportionate position, or
show them with a blurred or faulty appearance. That our said improvements furnish means to use several cameras in succession, or one in a variety of elevations, so as to take a representation of a whole figure, building, scenery, or other object, by means of which we seek letters patent of the United States, to be issued to the said Isaac Van Bunschoten, as the assignee of us, the said Isaac Van Bunschoten, John G. Woodbridge, and William E. Mann, and that the said improvements are collectively, constructively, operatively, and substantially set forth and shown in the following description, and in the drawing annexed to, and making part of this specification of our said improvements, wherein the

Fig. 1 is a plan; the

Fig. 2 is an elevation of the front or that part where the camera lenses are placed; the

Fig. 3 is an elevation of the back of these parts wherein the plates are adjusted for the required reflection to be received on them; and the

Fig. 4 is a sectional elevation, taken through the line A B of the Fig. 1. The detached Figs. are separately referred to, and the same letters and numbers, as marks of reference, apply throughout to the like parts in all the several Figs.

In these C is a pedestal for two standards, D D, which are made of a sufficient height to receive between them two or more carriages, E E. These are fixed on slide-clamps, *a a*, having returned ends at the angles of the standards, and a screw, 1, taking from one clamp through the other, to adjust to any required vertical position; a hinge at the front end of each carriage sustains that end of the platens *b b*, and a screw, 2, acting through the carriage E adjusts the platens *b b* to any proper angle for the proper 538 use of the camera-boxes F F, 1. The fronts of these cameras are made as are now usual; the backs have slides, *c*, to receive a slide-frame, *d*, whose length must be more in proportion to the width than is now commonly used, but, as a general rule, equal to all the collective height of all the camera-boxes intended to be used; that is, if two cameras are to be used, the slides *c* and frame *d* are to be twice as long as one box; if three cameras are used the length of the slide and frame is to be equal to three heights of boxes; and a like increase of length for each additional camera-box, as the frame *d* carries the usual intermediate slide between the object and the daguerreotype plate, and is intended to receive in a rebate a plate of sufficient length to receive impressions in successive sections from each camera used in any given operation, and be kept in place by springs 3, within the slides *c*, as shown in the sectional elevation, Fig. 4. In this mode of arranging the camera-boxes the attached slides for the daguerreotype plate in the upper box F are made of an extra length upwards, above the box, to pass the plate in so that the upper portion of the object to be represented is reflected on some given extent of the lowest portion of the plate. Below this box F a camera-box fitted, either in the ordinary manner or with slides extending both above and below the camera-box, may be used to reflect the middle portion of the object on the corresponding part of the plate, but whether this be so done or not the box F is made with the attached slide *c* and springs 3, prolonged downwards below the camera-box proper, so that the opposite end of the plate to that used in the box F can be put in to take the reflection of the lower part of the object in front of the camera. 539

To effect the "matching" of the successive reflected parts, the clamps *a a* and screws 1 enable the operator to adjust the heights of the carriages E, and the screws 2 and platens *b* serve to adjust the cameras on them at the proper horizontal angle to effect the operations intended. To prevent the effect of any stray reflection upon the parts not intended to be first operated on, and also to prevent more reflection upon the parts of the representation already executed, there is placed behind the fixed and *and* extra length of each back plate of the slides *c* a side plate, *e*; the end of this at the opening into the camera-box is made as a lip, 4, that lies against and barely touching the slide-plate in the frame *d*, as seen best in Fig. 4, and the top or bottom of the box in which this slide-plate *e* moves is fitted to pass a screw, 5, into a nut on

the slide *e*, to fix it accurately at the intended junction of the matching reflected parts on the plate in use, so as to cut off the light from the other part of the plate. On the back of the slide-plate *e* a set spring, 8, operating against the back side of the box, forces the front of the plate *e* against the fixed upper back plate of the slide *c* so as to retain the plate *e* at the proper position in that direction, and on the back of the slide-plate *e*, at one or both sides, a small vertical spring, 6, is so attached that the point turning under the plate, at one or both lower corners, comes out at either or each end of the lip to serve as a gauge-point, entering ratchet notches on the frame *d* that carries the daguerreotype plate. This furnishes an auxiliary or secondary means for adjusting the daguerreotype plate, so that the successive reflections shall
accurately match together; a small hook, 7, lying behind the
540 ratchet springs 6 gives the means of drawing back the spring to
move and adjust the frame *d*.

A variation in the mode of fitting the plate *e* is shown in the detached Figs. 5, 6, and 7. In these, Fig. 5 is a back elevation. Fig. 6 is an end elevation on that side of Fig. 5, and Fig. 7 is an opposite end elevation; *e* is the plate, and 4 the lip, as in the former description; but instead of being made solid as a part of the plate, as shown in Figs. 3 and 4, the lip is made narrower, and may be varied in width to suit the object operated on, and is moveable in a recess on the under edge of the plate *e*, with arms, one on each side; the screw, 5, and a notch on the outer side of each arm taking a guide stud, *x*, in each notch, and a two part keeper spring, 9, with the lower end against the moveable lip, to keep that in place, so that it projects out towards the intermediate slide in the frame *d*, the points of the rachet spring 6, as in the former Figs., set into notches on the face of the frame *d*, as before described; and the effects of these parts and the present described variations are, that when the operator is adjusting the machine by the focus glass in the usual way the lip, 4, in both cases projects to cut off any upward or downward action of the reflected light; and when the machine is properly adjusted, the focus glass is withdrawn and the frame *d* put in place, with the daguerreotype plate behind the side plate, as usual; the top is then closed to shut off any light but that coming through the object-glass of the camera, and the slide in the frame *d* withdrawn; the daguerreotype plates then take so much of the object to be represented as this part of the machine is adjusted for, after which the daguerreotype plate is withdrawn and placed successively into the next or more camera boxes to receive, in successive sections, the remaining parts of the objects to be represented.

541 We do not claim increasing the number of cameras as an invention, and we do not claim to have invented any of the parts described or used herein, irrespective of the particular manner in which we have so used them for these purposes, as all such parts taken separately are well known.

But we do claim as new, and of our invention, and desire to secure by letters patent of the United States, the application of the lengthened slides *c c*, either to act in opposite directions on one camera-box, or on a plurality of camera-boxes, for the purpose of taking daguerreotype representations in successive parts or sections, and effecting the junction or matching of successive sections, by combining with the foregoing parts the adjustable lip 4, for the purpose of shutting off any stray reflections from the parts already operated on, while the next successive part is operated on, or of shutting off the stray reflections at the commencement from that part of the daguerreotype plate that is to be operated on after the first portion, substantially in the manner and for the purposes described and shown.

In witness whereof, the parties to these presents have hereunto set their signatures this thirtieth day of June, in the year one thousand eight hundred and forty-eight.

ISAAC VAN BUNSCHOTEN.
JOHN J. WOODBRIDGE.
WILLIAM E. MANN.

Witnesses:
Wm. Serrell.
Lemuel W. Serrell.
Exd., H. H.

542 *Defendants' Exhibit No. 4.—E. G. T., ex'r.*

The U. S. Patent Office to all persons to whom these presents shall come, greeting:

This is to certify that the annexed is a true copy from the files of this office, of the file-wrapper and contents in the matter of letters patent granted to A. S. Southworth, dated April 10, 1855, No. 12700, for "plate-holder for cameras."

In testimony whereof I, J. M. Thacher, Acting Commissioner of Patents, have caused the seal of the Patent Office to be hereunto affixed this fifth day of August, in the year of our Lord one thousand eight hundred and seventy-four, and of the Independence of the United States the ninety-ninth.

[L. S.] J. M. THACHER,
Acting Commissioner.

Boston, *March 9th*, 1855.

Sir: In the matter of the application of A. S. Southworth for letters patent for improved plate-holder for cameras, I have the honor to transmit herewith—

1st. Duplicate drawings;
2d. Specification;
3d. Certificate of deposit for $30.

543 The model in this case follows by express.

Very respectfully, your ob't servant,
SAM COOPER.

Hon. Chas. Mason,
Commissioner of Patents, Washington, D. C.

(Backed:) Rece'd and filed March 12, 1855.—S. T. S.

Petition.

To the Commissioner of Patents:

The petition of A. S. Southworth, of Boston, in the county of Suffolk and State of Massachusetts, respectfully represents:

That your petitioner has invented a new and useful plate-holder for cameras, which he verily believes has not been known or used prior to the invention thereof by your petitioner. He therefore prays that letters patent of the United States may be granted to him therefor, vesting in him and his legal representatives the exclusive right to the same, upon the terms and conditions expressed in the act of Congress in that case made and provided; he having paid thirty dollars into the

Treasury, and complied with the other provisions of said act. And he hereby authorizes Samuel Cooper, of the city of Boston, to act as his attorney in presenting this application, altering or withdrawing the same as the case may require, to receive the patent when granted, with full power to substitute such other person as he may deem expedient in his stead.

ALBERT S. SOUTHWORTH.

544 *Oath.*

BOSTON, COUNTY OF SUFFOLK,
State of Massachusetts:

On this third day of February, 1855, before the subscriber, a justice of the peace for said county, personally appeared the within named A. S. Southworth, and made solemn oath that he verily believes himself to be the original and first inventor of the within described plate-holder for cameras, and that he does not know or believe the same was ever before known or used, and that he is a citizen of the United States.

J. WINGATE THORNTON,
Justice of the Peace.

To all whom it may concern:

Be it known that I, A. S. Southworth, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful plate-holder for cameras, for taking photographic impressions, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, in which Fig. 1 is a front view, Fig. 2 a rear view, Fig. 3 a similar view, the cover being dropt into a horizontal position, Fig. 4 a vertical section through the centre, Fig. 5 an end view, Fig. 6 details which will be referred to hereafter, Fig. 7 the slider.

In taking daguerreotypes of small size for lockets, it often occurs that the first picture taken is not properly timed or exposed to the light, and a second or a third is required to be taken before a perfect picture is obtained; each picture thus taken requires a freshly prepared plate, which causes a considerable consumption of time.

545 The object of my invention is to bring in rapid succession different parts of the same plate, or different plates, of whatsoever material prepared for photographic purposes, into the centre of the field of the lens, for the purpose of either timing them differently, that the most perfect may be selected, or of taking different views of the same object with the least delay possible, or of taking stereoscopic pictures upon the same or different plates with one camera. My invention consists in a peculiarly arranged frame in which the plate-holder is permitted to slide, by which means I am enabled to take four daguerreotypes upon one plate and at one sitting, different portions of the plate being brought successively opposite an opening in the frame, the opening remaining stationary in the axis of the camera, while the plate-holder and plate are removed.

The frame which guides the motion of the plate-holder is constructed as follows: A is the front plate, immediately in the rear of which is a zinc plate, B; in the centre of this plate is the hole C (seen in blue in Fig. 2), which is closed by the zinc slider D (Fig. 7), in the customary manner. Around the borders of this frame are the strips E, seen in section in Fig. 4, and in dotted lines in Fig. 1. The rear plate F of this frame is hinged to one of the strips E at *b;* between this plate and the

zinc plate B, and within the space enclosed by the strips E, slides the plate-holder, which is constructed as follows: G is the frame of the plate-holder, into the rectangular opening of which is inserted the dagauerrotype plate seen in red in Figs. 2 and 4, and in dotted lines in Fig. 1. The back plate H rests against the dagauerreotype plate and holds it in place. The plate-holder thus constructed is allowed to take four different positions within its carrying frame, so as to
546 bring the four different portions 1, 2, 3, and 4, Fig. 2, of the plate successively opposite to the opening C. It is guided in its motions in the following manner: I is a block attached to the back plate of the plate-holder, which projects through a rectangular opening K in the hinged plate F; the block I is moved in succession into the four corners of the opening K, by which means the four different portions of the daguerreotype plate are brought opposite to the opening C. The motions of the block I are regulated by the guide I hinged to the plate F at *d*; when this block is in the position seen in Fig. 2, the block I rests upon its top edge, and one corner of the daguerreotype plate (3) is opposite to the hole C; when the block I is slidden to the opposite corner of the opening K, still resting upon the piece L, another portion (4) of the daguerreotype plate is brought opposite the opening C. The guide piece L is then thrown back as seen in Fig. 4, and the block I is allowed to drop into the right hand lower corner of the opening K, the block I as it descends being guided by the edge *a*, and the portion (1) of the daguerreotype plate is brought opposite the opening C. By another movement the block L is thrown into the left-hand corner of the opening K, the block I sliding in the channel *c*, when the portion (2) of the daguerreotype plate is exposed to the opening C. I am thus enabled to take four impressions upon different portions of the same plate. These may be min*u*atures of the same person, taken, as before stated, for the purpose of selecting the best for a locket; or they may be different views of the same face taken upon the same plate for the purpose of preserving them together, or they may be daguerreotypes of
547 different persons as different members of a family; or, lastly, stereoscopic pictures may be thus taken with a suitably arranged camera.

It is evident that as the frame A B remains stationary, the opening C, when once placed in the axis of the camera, will not change, and the successive pictures will all be taken with equal correctness; and the changes are so quickly made that the aperture of the camera need not be covered from first to last, unless different positions or different objects are taken.

The guide-piece L or some equivalent thereof is absolutely essential, as the attempt to hold the block I by hand would shake the camera or move it from its normal position whilst the picture was being taken.

Heretofore I have spoken of the above contrivance as calculated to take four pictures upon the same plate; it is evident, however, that it may be so arranged as to take any desired number, as six or eight for example, without departing from the principle of my invention.

ALBERT S. SOUTHWORTH.

In presence of—
HARISON SMITH.
SAMUEL M. COLTON.

CLAIM.—What I claim as my invention, and desire to secure by letters patent, is the within described plate-holder in combination

548 with the frame in which it moves, constructed and operating in the manner and for the purpose substantially as herein set forth.

ALBERT S. SOUTHWORTH.

SAM. COOPER,
JOHN S. CLOW,
Witnesses.

(Backed:) A. S. Southworth. Rec'd and filed March 12, 1855. S. D. Shugert.

No. 12700. A. S. Southworth, of Boston, county of Suffolk, State of Massachusetts.

PLATE-HOLDER FOR CAMERAS.

Rec'd	March	12,	1855.
Petition	"	"	"
Affidavit	"	"	"
Specification	"	"	"
2 drawings	"	"	"
3 Model	"	15,	"
1 Cert. dep. $30	March	12,	1855.

Cash.
2 Examined March 24, 1854, T. R. Peale.
Issue, Shugert, March 26, 1855.
3 Patented April 10, 1855.
Recorded vol. 62, page 245.

SAMUEL COOPER,
Boston, Mass.

(Backed:) Plate-holders for cameras.
CXVIII.

549 *Defendant Irving's Exhibit No. 4.—E. G. T., ex'r.*

SOUTHERN DISTRICT OF NEW YORK,
City, County, and State of New York, ss:

James Irving, being duly sworn, says as follows:

I am 57 years of age; reside in Troy, in New York; am a photographer. During the year 1845 I was daguerreotypist in the village of West Troy, New York, and while there made two pictures on one plate by the use of a sliding lens, the camera-box being divided through the middle by a partition, which partition divided the plate in two nearly equal portions. In the early part of 1846, while in Troy, I made and used another camera-box with a sliding lens, as first described. I made pictures in this way for Mr. Richard Lobdell, president of West Troy Gas Co.

In 1847, at West Troy, after returning from Europe, I again entered the business of daguerreotypist, and then made and used a camera-box which took two pictures on one plate in the direct focus of the lens, as follows:

I passed a sliding plate-holder, containing a plate long enough for two pictures, across the opening in the frame in the camera-box for half the length of the plate, and drew out the slide, which exposed half of the plate to the lens, the other half being protected from the light by the frame; then, after taking one picture, I slid the plate-holder in the rest of the way and exposed the latter half of the plate, the part upon which the picture had been taken being protected from the light by the further or opposite side of the frame. During this operation there was no movement of the camera box or change of the focus of the lens.

550 This camera box was sold to Mr. Virgil J. Davids, to whom I taught its use, in the latter part of 1847; was by him taken to Virginia, and I don't know where it now is.

Soon after this, in the latter part of 1847 or the beginning of 1848, I entered the employment of Meade Bros., in Albany, New York, taking charge of their gallery and stock-room while they were absent from town, and generally supervising their business.

I then caused another frame and plate-holder to be made by Mr. Hugh Gayer, then and now of Albany, like the one last described by me, which was used by me, by Wm. Rablen, and by various persons then learning the business.

I fix the dates given above from various letters and documents, which I will produce when requested to do so.

I remained with the Meade Brothers until about 1850, during the latter part of that time as silent partner.

While I was with Meade Brothers there were the following gentlemen employed there as operators, Henry McBride, Wm. Rablen, Anson, and , Lawyer. I also operated myself, but not as regular operator; the Meades, also, both of them, would operate at times.

The way I came to make this affidavit is this:

Mr. Wing, one of the complainants in this suit, telegraphed to Mr. Seth E. Parsons, a photographer of Albany, N. Y., asking him to see me and induce me to testify in this cause in his (Wing's) behalf. Mr. Parsons spoke to me about this. Thereafter I held a conversation with Mr. C. C. Schoonmaker, of Troy, New York, whom I accidently met on the street, and he wrote the substance of our conversation to Mr.
551 H. T. Anthony, one of the defendants herein, and afterwards I was asked by Mr. Anthony to see his counsel, Mr. Charles F. Blake, of New York City, and by him (Mr. Blake) I was asked to make this affidavit, which I declare to be the truth.

I have seen a letter from Mr. Anthony to Mr. Schoonmaker, in which Mr. Anthony stated that he hid not know of any evidence prior to his (Schoonmaker's) letter to him, and I have received from Mr. Anthony myself a letter to the same effect, which I how have.

(Signed) JAMES IRVING.

Subscribed and sworn to before me, this 27th Dec., 1875.

(Signed) R. E. STILWELL.
U. S. Commissioner.

Defendants' Exhibit No. 13.—E. G. T., ex'r.

At a special term of the circuit court of the United States of America, for the northern district of New York, in the second circuit, held at the clerk' office in Utica, on Saturday, the 31st day of July, in the year of our Lord one thousand eight hundred and sixty-nine.

Present, the Hon. Samuel Nelson, justice.

SIMON WING
vs.
CHRISTOPHER C. SCHOONMAKER.

552 This cause having been brought to a hearing and argued at

the last October term of this court, in the city hall in Albany, by Mr. Cowen, for complainant, and Mr. H. Baldwin, jr., for defendant, and due deliberation being had therein: It is now here, on motion of Townsend & Browne, solicitors for defendants, ordered, adjudged, and decreed, and this court by virtue of the power and authority therein vested, doth hereby order, adjudge and decree that the said complainant's bill filed in this be, and the same hereby is, dismissed with costs.

Witness my hand and official seal, at my office in Utica, this 31st day of December, A. D. 1875.

(A true copy.)

[L. S.] CHARLES MASON, *Clerk.*

Defendant's Exhibit No. 14.—E. G. T., ex'r.

UNITED STATES OF AMERICA, *ss:*

[L. S.] The President of the United States of America to the honorable the judges of the circuit court of the United States for the northern district of New York, greeting:

Whereas lately, in the circuit court of the United States, for the northern district of New York, before you or some of you, in a cause between Simon Wing, complainant, and Christopher C. Schoonmaker, defendant, wherein the decree of the said circuit court, entered in said cause on the 31st day of July, A. D. 1869, is in the following words, viz::

553 "This cause having been duly brought to a hearing and argued at the last October term of this court, in the city hall at Albany, by Mr. Cowen, for complainant, and Mr. H. Baldwin, jr., for defendant, and due deliberation being had thereon, it is now here, on motion of Townsend and Browne, solicitors for defendants, ordered, adjudged and decreed, and this court, by virture of the power and authority therein vested, doth hereby order, adjudge and decree, that the said complainant's bill, filed in this cause be, and the same hereby is, dismissed with costs,"

As by the inspection of the transcript of the record of the said circuit court, which was brought into the Supreme Court of the United States by virtue of an appeal, agreeably to the act of Congress in such case made and provided, fully and at large appears:

And whereas, in the present term of December, in the year of our Lord one thousand eight hundred and seventy, the said cause came on to be heard before the said Supreme Court, on the said transcript of the record, and was argued by counsel. On consideration whereof, the court being equally divided in opinion, it is now here ordered, adjudged, and decreed by this court, that the decree of the said circuit court in this cause be, and the same is hereby affirmed with costs: and that the said defendant recover against the said complainant, Simon Wing, twenty, dollars for his costs herein expended, and have execution therefor.

You, therefore, are hereby commanded that such execution and proceedings be had in said cause as, according to right and justice, and the laws of the United States, ought to be had, the said appeal notwithstanding.

554 Witness the honorable Salmon P. Chase, Chief Justice of said Supreme Court, the first Monday of December, in the year of our Lord one thousand eight hundred and seventy.

Costs of defendant:

Clerk, paid by complainant	$
Attorney	20 00
	$20 00

Taxed by—

D. W. MIDDLETON,
Clerk of the Supreme Court of the United States.

UNITED STATES OF AMERICA,
Circuit Court Clerk's Office,
Northern District of New York, ss:

I, Charles Mason, clerk of said court, do hereby certify that I have compared the foregoing copy of mandate with the original now on file in this office, and that the same is a correct transcript therefrom, and of the whole of said original.

In testimony whereof, I have caused the seal of the said court to be affixed at the city of Utica, in said district, this 27th day of December, A. D. 1875.

[L. S.] CHARLES MASON, *Clerk.*

555 *Defendants' Exhibits, Eveleen Pratt No. 2.—B. T. V., spec. ex'r.*

Original sent to Chas. Blake, 16 Murray st., N. Y.

(Copy.)

Witness, J. H. TOMPKINS.

Questions for Mrs. Pratt:

1. Do you still remember seeing Mr. Pratt bring home small pictures of several heads on one plate, and cutting them apart in the evening for lockets, pins, &c., as you stated to me when at Staunton?

A. I do.

2. If so, about when was this—before or after going to Richmond?

A. In 1846, before going to Richmond.

3. Were those pictures made in the same manner of your son Julian's, or in some other manner?

A. In the same.

4. Did Mr. Pratt at that time use more than one brass tube in front of his camera, with which he made said pictures?

A. Never more than one.

5. Did you ever see Mr. Pratt, in making said pictures, move the whole camera box itself between such exposure of the plate?

A. Never.

6. Did you ever see him remove the plate-holder itself between each exposure of the plate?

A. Never.

7. Did you see him move the plate in the plate-holder between each exposure or not?

A. Yes, always.

E. PRATT.

556 (Copy.)

WALNUT GROVE, *Nov'r.*

D'R SIR: Your letter received. If my testimony be of any service in your case, I know of nothing to prevent my attendance at the time you name.

I shall have to have an escort to travel so far, and as my husband's health is too feeble to permit him to accompany me, I will substitute my son, the original of the quadruple picture, and who may be additional proof of its verity. The probable cost would be about $100, and if you consider my evidence of sufficient value to you you may consider me at your service. Of course I can confirm the testimony I gave Mr. Hopkins.

(Signed) EVELEEN PRATT.

DATES.

Eveleen Pratt, born Sept. 14, '20.
Wm. A. Pratt, born March 7, 1818.
Julian Pratt, born March 6, 1843.
Gallery opened December, 1846.
Quad. of Julian, taken March 6, 1847.
Convention taken in 1850 and 1851.
Patent granted April 10, 1855, for 14 and 7=21 years=1876.

Defendants' Exh. No. 15, Beckers' & Piard's copartnership agreement.

It is mutually understood and agreed between Alexander Beckers and Victor Piard that they enter into a joint and equal partnership on the following terms:

Alexander Beckers having sold to Victor Piard the undivided half of the fixtures, furniture, and other articles named in the paper marked A, attached hereto and making part of this document, and having received from said Piard a sum of money considered by said Beckers as fully equal to the value of the said undivided half, they do therefore contribute said articles to the common business of the joint 557 partnership. The profits of all business shall be equally divided between the said partners, share and share alike, and the losses, if any, shall be sustained by the said partners, share and share alike, and at any time that the said partners may mutually agree to close and terminate this partnership, all the property held in common by them shall, after the payment of all debts due by the said partnership, be divided equally between the said Beckers and the said Piard, share and share alike.

The name or style of the firm shall be Beckers & Piard, and this partnership shall commence on the 14th day of November, one thousand eight hundred and forty-nine, and terminate on the first day of May, one thousand eight hundred and fifty-two.

It is to be expressly understood and agreed that neither of the said partners is to use or sign the name of the firm for any purpose whatever except the legitimate business of the firm; that true books of account shall be kept of the business, which books shall at all times be open to both the said partners, and that whenever on balancing the books, it shall appear that any sums of money are due from the one to the other, such sums are to be paid over on demand.

It is also understood, that each of the said partners is to devote his whole time and attention exclusively to the joint business of the said partnership, but this is not to prevent the said Beckers from continuing the agency of certain chemicals, as at present, for his own individual account and profit.

It is also agreed mutually that neither of the said partners shall endorse any note in his individual name, as an act of friendship toward any person whatever.

In witness whereof, we have set our hands and affixed our seals this 14th day of November, one thousand eight hundred and forty-nine.

ALEX. BECKERS, [L. S.]
VICTOR PIARD, [L. S.]

Sealed and delivered in the presence of—
J. B. Hœsst.

558 *Inventory A, before referred to.*

IN OPERATING ROOM.

One Voightlænder & Sohn full-plate instrument, complete; one do. do., two-third do., quick do. do.; one do. do. one-sixth do. quick do.; one locket instrument complete; one Voightlænder & Sohn one-fourth size instrument do.; two head stands, old kind; two do., new do., two do. smaller; one large looking-glass with swing stand; 60 yards carpet in operating room; one large background; one small do.; one platform; one plaster of Paris column; one large speculum, metal reflector; two ottomans; one silk curtain and fixtures for sky-light; two small tables; one foot-stool; two children's chairs; one arm-chair; one table cover; awning and fixtures for sky-light; cost of building the operating or sky-light room.

IN RECEIVING ROOM.

Stairs and oil-cloth leading to operating room; two carpets; one looking-glass; two sofas; one center-table and cover; six chairs; three window shades and fixtures; one rocking-chair; one stove and pipe; one show-case and table; one small show-case for lockets; one picture of Franklin with frame, and map of colors and dag. copy; papering of this room.

IN WORKSHOP.

Three full-plate coating boxes; two half do.; three mercury baths; one machine for cleansing plates; one do. for polishing plates (not put up yet); one fly-wheel and shaft; twenty tools for working wood and iron; two large jars for water and hydrosulphate; one tin filter; two galvanic batteries; three large glass bottles with glass stoppers and two glass funnels; one stove and pipe; one plate vice for full plate, complete; one plate cleanser, do. do. do.; six plate-holders (Beckers' kind); six plate stands; one scale; one mortar and pestle; one set color and brushes; four boxes for Langenheim's patent coloring process; two dozen plate blocks; twenty plate boxes, all sizes; one 559 bromine pump; one machine to bend the edge of plates; two tin jars and lamps for alcohol and spirit gas; carpenter's bill to build storeroom, put up benches, &c.

ALEX. BECKERS.
VICTOR PIARD.

Witness present:
J. H. H. Pinckney.

The foregoing articles of copartnership are hereby extended, by mutual consent, unto five years from this date, viz., until the first day of May, 1857. At the same time, it being mutually understood and agreed by and between the said Beckers and Piard, that if at any time during the said five years the said Beckers should necessarily be absent from their said trade and business on private business of his own, for any space of time, such space of time not to exceed twelve months, then during such time of absence the said Beckers shall receive but one-fourth of all profits accruing from their said business; and the said Piard shall receive during the same time the remaining three-fourths of said profits; and at the end, or other sooner determination of their copartnership, the said copartners, each to the other, shall and will make a true, just, and final account of all things relating to their said business, and in all things truly adjust the same; and all and every the stock and stocks, as well as the gains and increase thereof, which shall appear to be remaining, either in money, goods, wares, fixtures, debts, or otherwise, shall be divided between them.

In witness whereof, the parties to these presents have hereunto set their hands and seals the day and year now mentioned, to wit, the first day of May, 1852.

ALEX. BECKERS. [L. S.]
VICTOR PIARD. [L. S.]

Signed, sealed, and delivered in the presence of—
C. SEWERYN,
J. H. HOBART PINCKNEY,
78 *Nassau st., N. Y.*

(Here follows diagram marked page 562.)

(Here follow 2 photographs marked pages 563 & 564.)

(Here follow 4 diagrams marked pages 565, 566, 567, & 568.)

(Here follow 2 photographs marked pages 569 & 570.)

571 At a stated term of the circuit court of the United States of America for the southern district of New York, in the second circuit, held at the United States court-rooms, in the city of New York, on Monday, the 17th day of December, in the year of our Lord one thousand eight hundred and seventy-seven, present, the honorable Hoyt H. Wheeler, circuit judge.

SIMON WING ET AL.
vs.
EDWARD T. ANTHONY ET AL.

The above-entitled cause coming on for final hearing upon pleadings and proofs,

Mr. JOHN S. ABBOTT is heard in behalf of the complainant.

572 At a stated term of the circuit court of the United States of America for the southern district of New York, in the second circuit, held at the United States court-rooms, in the city of New York, on Tuesday, the 18th day of December, in the year of our Lord one thousand eight hundred and seventy-seven, present, the honorable Hoyt H. Wheeler, circuit judge.

SIMON WING ET AL.
vs.
EDWARD T. ANTHONY ET AL.

The final hearing in the above-entitled cause being resumed pursuant to adjournment,

Mr. JOHN S. ABBOTT continues his argument in behalf of the complainants.

573 At a stated term of the circuit court of the United States of America for the southern district of New York, in the second circuit, held at the United States court-rooms, in the city of New York, on Wednesday, the 19th day of December, in the year of our Lord one thousand eight hundred and seventy-seven, present, the honorable Hoyt H. Wheeler, circuit judge.

SIMON WING ET AL.
vs.
EDWARD T. ANTHONY ET AL.

The final hearing in the above-entitled cause being resumed pursuant to adjournment,

Mr. ABBOTT concludes his argument in behalf of the complainants.

Mr. CHARLES F. BLAKE is heard in behalf of the defendants.

574 At a stated term of the circuit court of the United States of America for the southern district of New York, in the second circuit, held at the United States court-rooms, in the city of New York, on Thursday, the 20th day of December, in the year of our Lord one thousand eight hundred and seventy-seven, present, the honorable Hoyt H. Wheeler, circuit judge.

SIMON WING ET AL.
vs.
EDWARD T. ANTHONY ET AL.

The final hearing in the above-entitled cause being resumed pursuant to adjournment.

Mr. CHARLES F. BLAKE is heard in behalf of the defendants.

575 At a stated term of the circuit court of the United States of America for the southern district of New York, in the second circuit, held at the United States court-rooms, in the city of New York, on Friday, the 21st day of December, in the year of our Lord one thousand eight hundred and seventy-seven, present, the honorable Hoyt H. Wheeler, circuit judge.

SIMON WING ET AL.
vs.
EDWARD T. ANTHONY ET AL.

The final hearing in the above-entitled cause being resumed pursuant to adjournment.

Mr. BLAKE concludes his argument in behalf of the defendants.

Curia advisare vult.

576 Decision of U. S. circuit court, southern district of New York.

SIMON WING, ALBERT S. SOUTHWORTH, AND Marcus Ormsbee, *vs.* EDWARD ANTHONY, HENRY T. ANTHONY, AND Vincent M. Wilcox.	In equity. October term, 1877.

This suit is brought upon reissued letters patent No. 1049, dated September 25th, 1860, to Albert S. Southworth, for "certain improvements in taking photographic impressions."

The validity of this reissued patent is denied for want of novelty in the original, and because it is for a different invention from that in the original.

Infringement is also denied.

The patent has been held to be valid by Mr. Justice Clifford in Wing vs. Richardson, 3 Fisher, 535, by Blatchford, J., following that decision as an authority, in Ormsbee vs. Wood, 3 Fisher, 372, and by Shepley, J., in Wing vs. Dunshee, district of Massachusetts, without delivering any opinion. And it has been held to be invalid by Mr. Justice Nelson, in Wing vs. Schoonmaker, 3 Fisher, 607, and by Withey, J., in Wing vs. Tompkins, western district of Michigan. The decree of Mr. Justice Nelson was affirmed by the Supreme Court, equally divided, on appeal. It is understood that this decision of the Supreme Court was accompanied by a statement showing the manner in which it was made, that the question might be left open in other cases, and that decision did not appear to be an authority upon it either way. Durant vs. Essex Company, 7 Wall., 107. In this state of the decisions upon this patent it seems necessary to examine this case in the light of the evidence in it and such recognized principles of law as appear to be applicable, however much easier and pleasanter it might be to follow implicitly one or the other of these decisions.

In the specification of the original patent the inventor said that the object of his invention was "to bring in rapid succession different parts of the same plate, or different plates, of whatsoever material prepared for photographic purposes, into the centre of the field of the lens, for the purpose of either timing them differently, that the most perfect may be selected, or of taking different views of the same object with the least delay possible, or of taking stereoscopic pictures upon the same or different plates with one camera." That it consisted "of a peculiarly arranged frame in which the plate-holder" was "permitted to slide, by which means" he was "enabled to take four daguerreotypes upon one plate and at one sitting, different portions of the plate being brought successively opposite an opening in the frame, the opening remaining stationary in the axis of the camera while the plate-holder and plate are moved." He then described the construction of the plate-holder by which a smaller frame holding the plate could be readily moved into and held in the four corners of a larger one, during the required space of time, by an ingeniously constructed guide-piece designated L, and then stated that the "guide-piece L, or some equivalent thereof, is absolutely essential, as the attempt to hold the block I," by which the smaller plate was moved, "by hand would shake the camera or remove it from its normal position whilst the picture was being taken." The claim was for: The within-described plate-holder in combination with the frame in which it moves, constructed and operating in the manner and for the purpose substantially as herein set forth.

In the specification of the reissue the inventor stated that in carrying out his invention he had "made use of a peculiarly arranged frame in which the plate-holder is permitted to slide, and in which the position of the plate-holder is definitely indicated to the operator so 577 that he can quickly and accurately adjust the plate or plates, and described the mechanism and construction substantially as in the original, and making the same statement as to the guide-piece being absolutely essential; and added: "It is evident that my improvement may be embodied by causing the lens of the camera to be made adjustable in different positions with respect to the plate, while the plate remains stationary, so that different portions of the plate may be brought into the field of the lens. This I have tried, but do not consider it practically so good a plan as the foregoing, as it necessitates a change of the position of the camera itself or of the objects."

The claim was: "What I claim as my invention and desire to secure by letters patent is bringing the different portions of a single plate, or several smaller plates, successively into the field of the lens of the camera substantially in the manner and for the purpose specified."

It is quite obvious that the original patent was for the plate-holder of a camera, in its peculiar construction with its peculiar mechanism, and not for anything more. There was nothing whatever in it about moving the lens of the camera, or making it adjustable in different positions in respect to the plate, in order to accomplish the purposes of the invention. In the reissue there are no means whatever described for adjusting the lens in different positions in respect to the plate, with the plate stationary, to bring different portions of the plate successively into the field of the lens. It is argued that bringing this subject of moving the lens into the reissue constitutes a different invention from that in the original. If the mere statement here that it was evident that this might be done, without stating at all how, could be said to specify any manner of doing it, then the claim would include that manner, and the invention sought to be covered, as to so much, would be for what was not in the original, and essentially different from that, and the patent would be void. Seymour vs. Osborn, 11 Wall., 544. But whatever may have been intended by putting it in this statement is not of anything essential to the invention, otherwise described, and describes nothing amounting to an invention by itself. It is not definite enough so that it can fairly be said to add to or vary that with which it is put. It is said Mr. Justice Field in Russell vs. Dodge 93, U.S., 460, that: Where a useful result is produced in any art, manufacture, or composition of matter by the use of certain means for which the inventor or discoverer obtains a patent it is too plain for argument that the means described must be the essential and absolutely necessary means, and not mere adjuncts which may be used or abandoned at pleasure.

If the claim was for bringing different portions of plates successively into the field of the lens, without regard to the means by which it was done, as the central part of the field is mentioned in the original and not in the reissue, the invention sought to be covered by the reissue would then be broader than that in the original, and void, as that in Russell vs. Dodge was held to be. But that does not seem to be the true construction of the claim. It is for so bringing the different portions of the plate into that field, "substantially in the manner and for the purpose specified."

This is the same as if it had been for the manner or means specified ent from any other shown to have been made or in use prior to that time. This seems to be the effect of the testimony of the defendant's expert, Hicks, as well as the result of an examination of the testimony describing the various contrivances more or less relied upon, and the model and exhibits illustrating them. From these considerations the patent appears to me to be valid for that arrangement, and for that only.

There remains the question made as to whether the defendants infringe the patent, in its extent, according to this construction of it.

They have in their cameras smaller plate-holders movable into the corners of a larger frame substantially as described in the patent. But they are not shown to have the guide-piece L, nor anything substantially like it or substantially an equivalent for it. If the patent covered a sliding plate-holder moving into the corners of a larger frame as well as the guide-piece, the use of the former would be an infringement. But it does not. Such a plate-holder was old at the time of the invention. The patent is really for the method of moving the plate-holder and plate from corner to corner and holding it in position there for the required length of time, without disturbing the camera as focused; or the relative positions of the object to be pictured, the lens, and the opening to admit the image in the best part of the field of the lens in front of the plate. The inventor accomplished this by the guide-piece, hinged to the larger frame, and controlling the movements of the smaller one within. The defendants accomplish the same thing by another mode. In the language of Mr. Chief Justice-Taney before quoted, they use means substantially different from those described, and lawfully accomplish the same end without infringing the patent.

Let a decree be entered dismissing the bill of complaint with costs.

(Signed) HOYT H. WHEELER.

580 At a stated term of the circuit court in and for the second circuit and southern district of New York, held at the city of New York, on the 15th day of April, 1879.

Present, the Honorable Hoyt H. Wheeler, judge.

SIMON WING, A. S. SOUTHWORTH, AND MARCUS ORMSBEE
vs.
EDWARD ANTHONY, HENRY T. ANTHONY, AND V. M. WILCOX.

This cause having come on to be heard before this court, held by his honor Hoyt H. Wheeler, judge, and having been argued by counsel for the respective parties:

Now, therefore, upon consideration thereof—

It is hereby ordered, adjudged, and decreed that the complainants' bill herein be, and the same hereby is, dismissed, with costs to the defendants.

581 And the said complainants and the said defendants having agreed on the taxable costs, it is hereby further ordered, adjudged, and decreed that the said defendants do recover from the said complainants, and from either or all of them, the sum of one thousand and two ($1,002.00) dollars and five (5) cents, and that they have execution therefor.

HOYT H. WHEELER.

Approved as to form and substance, and may be filed and entered.

JOHN S. ABBOTT,
For Complainants.
CHARLES F. BLAKE,
For Defendants.

(Endorsed:) U. S. C. C., S. D. N. Y. Equity. Wing et als. vs. Anthony et als. Decree. U. S. circuit court. Filed Apr. 15, 1879. John I. Davenport, clerk.

582 United States circuit court, southern district of New York. In equity.

SIMON WING ET AL.
vs.
H. T. ANTHONY ET AL.

It is hereby agreed that the foregoing record does and shall constitute the record on appeal to the Supreme Court of the United States in the above-entitled action.

Dated Sept. 29, 1879.

ABBOTT BROTHERS,
Att'y for Appellants.
CHARLES F. BLAKE,
Att'y for Resp'd't.

(Endorsed:) U. S. circuit court. Filed Sep. 29, 1879. John I. Davenport, clerk.

583 United States circuit court, southern district of New York. In equity.

SIMON WING ET AL.
vs.
H. T. ANTHONY ET ALS.

It is hereby stipulated and agreed that the exhibits, documentary and model, forming part of the record herein, shall not be sent up to the Supreme Court by the clerk of this court when he sends up the record on appeal herein, but that the said exhibits, and all of them, for both sides, may and shall be retained by the said clerk in his custody, not to be sent up until requested so to do by the respective parties herein as to their exhibits respectively. The intent hereof being that the parties may have greater convenience in preparing their arguments before the said Supreme Court. Thirty days after notice by either party all exhibits shall be sent forward by the clerk.

ABBOTT BROS.,
584 *Sol'r for Compl'ts.*
CHARLES F. BLAKE,
Sol'r for Def'ts.

NEW YORK, *Sept. 25th*, 1879.

(Endorsed:) U. S. circuit court. Filed Sep. 29, 1879. John I. Davenport, clerk.

585 Circuit court of the United States, southern district of New York.

SIMON WING, A. S. SOUTHWORTH, AND MARCUS Ormsbee, complainants,
vs.
EDWARD ANTHONY, HENRY T. ANTHONY, AND V. M. Wilcox, defendants.
} In equity.

To the honorable the Supreme Court of the United States:

The appeal of the above-named Simon Wing, A. S. Southworth, and Marcus Ormsbee, complainants and appellants, respectfully showeth:

That upon the 16th day of June, 1873, they filed their bill of complaint
in the circuit court of the United States for the southern district of
New York, against the above-named defendants, charging them with
having wrongfully infringed certain letters patent of the United
586 States owned by said complainants; that a subpœna was duly
issued and served; that the said defendants appeared and filed
their answers, and the complainants filed their replication; that testimony was taken by both parties.

That thereafterwards the cause was heard by said circuit court upon the pleadings, proofs, and arguments of the respective parties, and that, in accordance with the decision of said circuit court, a final decree was, on the 15th day of April, 1879, made, pronounced, and filed in the said cause, wherein it was adjudged and decreed that the complainants' bill be dismissed with costs to the defendants, taxed at one thousand and two dollars and five cents.

Wherefore the complainants appeal from the whole of said decree of
said circuit court, and respectfully pray that the pleadings, proofs, proceedings, and decree in said cause may be sent to the Supreme
587 Court of the United States without delay, and that the said Supreme Court proceed to hear the cause anew; and that the said
decree of the circuit court, and every part thereof, be reversed, and that a decree be made by which the said bill shall be sustained and the said defendants shall be required to account with and pay to the complainants the profits they have derived, and the damages they have caused the complainants by reason of the infringement of said letters patent, and the costs of complainants in this behalf, and such other decree as to the said Supreme Court shall seem just.

Dated May 16, 1879.

ABBOTT BROTHERS,
Solicitors for Appellants.

JOHN S. ABBOTT,
Counsel.

(Endorsed:) U. S. circuit court, so. district of New York. Simon
Wing et al., vs. Edward Anthony et als. Appeal to Supreme
588 Court. Abbott Brothers, sol'rs, for appellants. Service of the
within appeal is hereby admitted. Dated May 22, 1879. Charles
F. Blake, def'ts' sol'r. U. S. circuit court. Filed May 23, 1879. John
I. Davenport, clerk.

589 *Bond for costs and damages.*

Circuit court of the United States of America for the southern district of New York, in the second circuit.

SIMON WING, A. S. SOUTHWORTH, AND MARCUS Ormsbee, complainants,
vs.
EDWARD ANTHONY, HENRY T. ANTHONY AND V. M. Wilcox, defendants.

Know all men by these presents that we, Simon Wing and Benjamin French, both of Boston, in the State of Massachusetts, are held and firmly bound unto the above-named Edward Anthony, Henry T. Anthony, & V. M. Wilcox in the sum of fifteen hundred dollars, to be paid to the said Anthony & Wilcox, for the payment of which, well and truly to be made, we bind ourselves, and each of us, our and each of our heirs, executors, and administrators, jointly and severally, firmly by these presents; sealed with our seals and dated the 16th day of May, in the year of our Lord one thousand eight hundred and seventy-nine.

Whereas the above-named Wing, Southworth, & Ormsbee have prosecuted & are to prosecute to the Supreme Court of the United States, their appeal to reverse the decree rendered in the above-entitled suit, by the judge of the circuit court of the United States for the southern district of New York, filed April 15, 1879:

Now, therefore, the condition of this obligation is such, that if the above-named Wing, Southworth, & Ormsbee shall prosecute said appeal to effect, and answer all damages and costs if they fail to make the same good, then this obligation shall be void; otherwise the same shall be and remain in full force and virtue.

SIMON WING. [L. S.]
BENJ. FRENCH. [L. S.]

Sealed and delivered, and taken and acknowledged, this 16th day of May, 1879, before me, in said Boston.

[NOTARIAL SEAL.] JOHN S. ABBOTT,
Notary Public within and for the County of Suffolk, Mass.

590 UNITED STATES OF AMERICA,
District of Massachusetts, ss:

Benjamin French, the surety in the within bond, being duly sworn, deposes and says that he is worth more than the sum of three thousand dollars over and above all his just debts and liabilities.

BENJ. FRENCH.

SUFFOLK CO., *ss:*

Sworn to this 21st day of May, A. D. 1879, before me.

[NOTARIAL SEAL.] JOHN S. ABBOTT,
Notary Public.

We approve the within bond as to form and sufficiency of the surety, and consent that the same be allowed and filed.

N. Y., May 22, 1879.

CHARLES F. BLAKE.
Def'ts' Sol'r.

Approved May 23d, 1879.

SAM'L BLATCHFORD.
Circuit Judge.

(Indorsed:) Vol. , page . U. S. circuit court, so. district of New York. Simon Wing et al. vs. Edward Anthony et als. Bond for damages and costs on appeal to Supreme Court. Abbott Brothers, compl'ts' solicitors. U. S. circuit court. Filed May 23, 1879. John I. Davenport, clerk.

591 By the honorable Samuel Blatchford, judge of the circuit court of the United States for the southern district of New York.

To Edward Anthony, Henry T. Anthony, and Vincent M. Wilcox:

Whereas Simon Wing, Albert S. Southworth, and Marcus Ormsbee have lately appealed to the Supreme Court of the United States from a decree lately rendered in the circuit court of the United States for the southern district of New York, made in favor of you, the said Edward Anthony, Henry T. Anthony, and Vincent M. Wilcox, in a suit in equity brought by them against you, and have filed the security required by law, you are, therefore, hereby cited to appear before the said Supreme Court, at the city of Washington, on the second Monday of October next, to do and receive what may appertain to justice to be done in the premises.

592 Given under my hand, at the city of New York, in the southern district of New York, in the second circuit, the 23d day of May, in the year of our Lord one thousand eight hundred and seventy-nine.

SAM'L BLATCHFORD.

(Endorsed:) U. S. circuit court, so. district of New York. Simon Wing et al. vs. Edward Anthony et als. Citation on appeal. Service of the within citation is hereby admitted this 26th day of May, 1879. Charles F. Blake, sol'r for def's; Abbott Brothers, sol'rs for app'ts, 71 Broadway, N. Y. City. U. S. circuit court. Filed May 26, 1879. John I. Davenport, clerk.

593 UNITED STATES OF AMERICA,
Southern District of New York, ss:

I, John J. Davenport, clerk of the circuit court of the United States of America, for the southern district of New York, in the second circuit, do hereby certify that the foregoing pages, numbered from one to 592, inclusive, contain a true and complete transcript of the record and proceedings had in said court, in the case of Simon Wing, A. S. Southworth, and Marcus Ormsbee, complainants, against Edward Anthony, Henry T. Anthony, and V. M. Wilcox, defendants, as the same remain of record and on file in said office.

In testimony whereof I have caused the seal of the said court to be hereunto affixed, at the city of New York, in the southern district of New York, in the second circuit, this second day of October, in the year of our Lord one thousand eight hundred and seventy-nine, and of the Independence of the said United States the one hundred and fourth.

[SEAL.] JOHN I. DAVENPORT, *Clerk.*

(Indorsement on cover:) No. 336. Simon Wing, Albert S. Southworth, and Marcus Ormsbee, appellants, vs. Edward Anthony, Henry T. Anthony, & Vincent M. Wilcox. S. New York, C. C. U. S. Filed 14th October, 1879.

○

16-142

OFFICE SUPREME COURT U.S.
FILED
OCT 24 1882
H. McKENNEY

United States Supreme Court

IN EQUITY.

SIMON WING ET AL,

Appellants.

vs.

EDWARD ANTHONY ET ALS,

Respondents.

APPELLANTS' BRIEF.

ALBERT A. ABBOTT,

Counsel for Appellants,

71 BROADWAY,

NEW YORK.

WM. A. LEONARD, PRINTER,
No. 173 GREENWICH STREET, NEW YORK.
1882.

Supreme Court of the United States

IN EQUITY.

SIMON WING,
ALBERT S. SOUTHWORTH and
MARCUS ORMSBEE,
Appellants,

vs.

EDWARD ANTHONY,
HENRY T. ANTHONY and
VINCENT M. WILCOX,
Respondents.

Appeal from the Decree of the Circuit Court of the United States for the Southern District of New York, Dismissing the Bill with Costs.

BRIEF FOR APPELLANTS.

The bill was filed for the infringement by the defendants of Re-issued Letters Patent, granted to Albert S. Southworth Sept. 25, 1860. The original Letters Patent were granted April 10th, 1855.

The defendants admitted that said Letters Patent were granted, surrendered, re-issued, assigned and extended as alleged in the bill; but they denied the novelty and the utility of the invention described in said Letters

Patent, and denied infringement. They further allege that the re-issued patent is not for the same invention as the original.

The validity of these Letters Patent was established by Mr. Justice Clifford in Wing v. Richardson, 2 Fisher, 535; by Mr. Justice Blatchford in Ormsbee vs. Wood, 3 Fisher, 372, and by Mr. Justice Shepley in Wing vs. Dunshee. They were declared invalid by Mr. Justice Nelson in Wing vs. Schoonmaker, 3 Fisher, 607, as to the correctness of whose decision this Court on appeal therefrom was equally divided.

The Invention.

Southworth's invention may be briefly described as a method of taking several photographic pictures successively on the same plate, without removing the plate from the camera.

To the trade his device has been known as the Multiplying Camera.

I.

State of the Art.

In taking photographic pictures a camera is used. This may be crudely described as an oblong box, in one end of which is inserted a tube containing a double convex lens, while at the other end is a frame or plate-holder, immediately in front of which is a sliding shield.

A thin sheet of metal, called a plate, receives in a dark room a chemical preparation which is acted upon by light. It is then put into the plate-holder—the plate-holder affixed to the camera—the shield is withdrawn, and the rays of light, passing through the lens from an object suitably located, fall upon the plate, producing there an image of the object. This being perfected by certain other chemical processes is called a negative, and from it many copies may be printed. Thus photographs are produced.

A skillful operator will so arrange his apparatus with relation to the object to be pictured that a right line drawn from the centre of the object will pass directly through the axis of the lens, and, continued to the plate, will be at right angles with it.

The point selected as the centre of the object may be the actual centre, or another, chosen for artistic reasons, or with regard to that portion of the object of which the best representation is desired—as in a person, the face.

This practice results from well known optical laws, and, if observed, the central ray of light passes from the point selected as the centre of the object through the axis of the lens; all of the other rays of light, proceeding from the object toward the lens, converge at the focus of the lens, thence equally diverging until their further progress is resisted by the plate. If the plate is at right angles with the central ray all of the other rays fall upon the plate in the same relation as they have proceeded from the object.

In this manner pictures the most nearly perfect are obtained. If all of these conditions are not substantially observed the picture will be distorted and imperfect. These optical laws are well known, and are referred to by the expert witnesses of both parties [pp. 80 and 176].

Prior to Southworth's invention only a single picture, substantially perfect, could be taken on the same plate.

Many difficulties resulted from this. A movement of the sitter; an unfortunate facial expression; too long or too short an exposure of the plate to the light, resulted in the necessity for repeated experiment. This required the removal of the plate-holder into the dark room; the preparation of a new plate, and, in fact, a repetition of the complete process. Meantime, if a person was the object to be pictured, fatigue and impatience from delay would tend to render further experiments more disastrous than the first.

It will be readily appreciated that if these difficulties could be overcome, without substantial departure from

Patent, and denied infringement. They further allege that the re-issued patent is not for the same invention as the original.

The validity of these Letters Patent was established by Mr. Justice Clifford in Wing v. Richardson, 2 Fisher, 535; by Mr. Justice Blatchford in Ormsbee vs. Wood, 3 Fisher, 372, and by Mr. Justice Shepley in Wing vs. Dunshee. They were declared invalid by Mr. Justice Nelson in Wing vs. Schoonmaker, 3 Fisher, 607, as to the correctness of whose decision this Court on appeal therefrom was equally divided.

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It will be readily appreciated that if these difficulties could be overcome, without substantial departure from the optical laws before referred to, a very useful result would be accomplished.

II.

HISTORY OF SOUTHWORTH'S INVENTION.

Southworth was one of the very first to take up the art of photography as a business. This he did in the winter of 1839–40. At this time it was entirely new, and little was known about it except its first principles, either in regard to apparatus, chemicals, or manipulations [p. 25].

From this time onward he was actively engaged in the business, and necessarily encountered the difficulties which have been mentioned. Thus he was naturally led to the first and most important stage of the invention—its conception in the mind of the inventor.

In the autumn of 1846 the invention first took material form, and Mr. Southworth caused a camera of a new design to be made by Ethan N. Coburn, of Boston, who was then employed as a workman of Southworth's at Post Mills, Thetford, Vermont [p. 25]. This camera is produced in evidence here, and is marked "Exhibit "No. 6." It was received by Southworth November 25, 1846, and was made entirely after a plan devised and discovered by him. "The design was," he says, "to "have one frame and one plate, and so arranged as to "have several pictures upon it."

This was accomplished by wings extending from both sides of the rear of the camera, having grooves at top and bottom to hold in place a plate-holder which could be slid along the grooves horizontally or laterally, exposing in succession different portions of the plate to the action of the light proceeding through the lens.

This Camera was never put into actual use, and it is not proved or claimed that any plate-holder was ever made to fit it.

Whether this may be regarded as a demonstration of the invention will be considered later.

When the Camera Exhibit No. 6 was received by Southworth, it was apparent to him that the principle of his invention, if embodied in that form, could not be generally utilized without discarding the cameras then in use, and making new ones, which would entail an expense not likely to be welcomed in the early days of photography.

He discovered that substantially the same principle would be involved whether the lens was shifted with relation to the plate or the plate with relation to the lens; and that, if the lens was made movable, the plan could be practically applied to the cameras then in general use.

This alteration was made under Southworth's direction, by a workman in his employ named Stewart, between November, 1846, and April, 1847. [pp. 26, 27.]

Exhibit No. 12 is a model of the apparatus made by Stewart, and Exhibits 7 to 11 are various parts thereof. Exhibit 7 is the original sliding front made by Stewart, and is, of course, the most important part so far as the illustration of the invention is concerned.

In this camera the plate remained stationary, while the lens was movable into each of the corners of a small square in front of the camera, and held in position the necessary length of time by pins. Thereby the same result was accomplished as by the movable plate-holder—*i. e.*, different portions of the plate were successively exposed to the action of the light proceeding through the lens.

This Camera was used by Mr. Southworth in the Spring, and, probably, in the Winter of 1847. Several pictures were taken by him with it; among others, of scholars from Mrs. Burrill's school at South Boston; and the apparatus was shown privately and confidentially to Mr. Langenheim, of Philadelphia, and Mr. Edward White, of New York.

No application for a patent for this invention was made by Southworth until about December, 1854; but the delay is well accounted for, and in none of the numerous cases wherein the patent has been litigated has it been regarded as impairing the validity of the patent. We need, therefore, make but a brief reference to the causes of delay. They were: Lack of means, absence in California, sickness, and lack of time, owing to other engrossing cares [pp. 28, 34].

In 1852, Southworth first practically used a camera like Exhibit No. 6, having the sliding plate-holder with the lateral motion [pp. 30–31]. At this time, and probably until about the time when he applied for the patent, his time was employed in the investigation and improvement of the stereoscope.

About December, 1854, Southworth made application for his patent, and at that time the progress of the art in other directions, and the increased demand for photographic pictures, naturally led him to adopt as the best form in which his invention could then be used the movable plate-holder, instead of the movable lens. To this form he resorted in his application, and gave to his shifting plate-holder not only the lateral motion of his first camera, but also the vertical motion of the second; and, instead of the pins which he had used to keep the *lens* in position, he used, to hold the *movable plate*, a block of wood, hinged to the frame, which, when the plate was in the upper corners of the frame, could be swung inwardly, and would act as a wedge or prop to keep the plate in position.

In his application for a patent he made the *plate-holder* movable into each of the four corners of a larger frame, just as in the second, or Stewart Camera, he had made the *lens* movable into the corners of a square.

So doing, he followed exactly the requirement of the law, and explained "the best mode" in which he had contemplated applying his principle.

In the specification of the original patent Southworth says: "The object of my invention is to bring in rapid "succession different portions of the same plate or different plates, of whatsoever material, prepared for photographic purposes, into the centre of the field of the "lens, for the purpose of either timing them differently "that the most perfect may be selected, or of taking "different views of the same object with the least "delay possible, or of taking stereoscopic pictures "upon the same or different plates with one camera" [p. 15]. After describing minutely the shifting plate-holder as the best mode of accomplishing this object his claim is this:

"CLAIM * * * The within described plate-holder, in "combination with the frame in which it moves, con"structed and operating in the manner and for the pur"pose substantially as herein set forth."

These specifications made no mention of the movable lens as an equivalent method by which the principle of the invention could be and had been demonstrated, and in that particular also the *claim* was defective.

The original letters patent having been surrendered, re-issued letters patent were granted on September 25, 1860. In these, as well as in the original, the invention is described as a new and useful plate-holder for cameras; the object and method of applying the invention are described with substantial similarity in both, except that these words are found in the later specifications which were not in the original:

"It is evident that my improvement may be embodied "by causing the lens of the camera to be made adjust"able in different positions with respect to the plate, "while the plate remains stationary, so that different "portions of the plate may be brought into the field of "the lens. This I have tried, but do not consider it "practically so good a plan, as it necessitates a change "of position of the camera itself or of the objects."

The claim which followed was this:

"CLAIM.—What I claim * * * is bringing the different "portions of a single plate or several smaller plates suc-"cessively into the field of the lens of the camera, "substantially in the manner and for the purpose "specified."

On the 8th day of April, 1869, the patent was extended for seven years from April 10, 1869.

Having thus briefly traced the history of the invention, it is important to determine what date should be assigned to it. If it shall be found that our views are correct upon this point most of the defendants' testimony as to prior use will require no consideration.

III.

DATE OF SOUTHWORTH'S INVENTION.

FIRST.—THE COBURN CAMERA—

That the camera, Exhibit No. 6, was made by Ethan N. Coburn in the fall of 1846, under Southworth's directions and according to his own design, and that it was received by him November 25, 1846, does not admit of any question. The original camera is produced and identified by both Southworth and Coburn; an invoice book of Southworth's shows the date of its receipt, and both of them, as well as Mrs. Nancy N. Hawes, testify positively to these facts, and support their evidence by unmistakable circumstances [pp 25 to 36, 37, 39].

The object of this camera—to take several successive pictures on the same plate—was the object of the patented device, and the mode of operation was similar, both having a sliding plate-holder.

Was it sufficiently completed to demonstrate the invention and to establish by occular proof that the inventor's theory was capable of practical and useful application?

We think this can fairly be claimed. The completed work of the inventor was embodied in this camera; all that remained to be done was the province of a mere mechanic, and consisted in making and fitting an ordinary plate-holder, of suitable size, to slide in the grooves ready for it. For this no inventive faculty would be required, and, indeed, to any one ordinarily skilled in the art, everything necessary to render this camera a complete working apparatus would be obvious at a glance.

As to perfectness, the question is whether it was perfect in the sense that it embodied a complete invention, and not whether it was perfect in mechanical execution.

Am. Knife & C. Co. v. Am. Tool Co. 4 *Fish.*, 284.

The fact that the plate-holder in the Coburn Camera was intended to have a lateral motion only, while in the patent, both lateral and vertical movements are provided for, is not important. An inventor both before and after patent, is entitled to claim as his original invention all modifications resulting from experience in the use of his invention which do not involve any new or further invention.

Decker vs. Grote, 6 *Fish.*, 143.

A camera with a shifting plate-holder being newly discovered to be useful, the direction in which it shifts is no essential part of the invention.

We therefore submit that *the date of Southworth's invention was November* 25, 1846.

SECOND.—THE STEWART CAMERA—

There are no questions of fact involved in the discussion of this instrument. When the Coburn Camera was received the art of photography was still young, and those who practised it doubtless struggled against the adversities of all new adventures, and especially with poverty. Southworth knew nearly all of the operators in the country, and appreciated their situation and embarrassments.

They could not afford to purchase cameras entirely new, and some expedient was necessary to be resorted to, by which this difficulty could be overcome, and the principle of his invention adapted, without great expense, to the camera then in use.

He was therefore naturally led to such a change of form. The transition was an easy one, and he apparently had no difficulty in making it, as it followed almost immediately the completion of the Coburn Camera.

Abundant proof of the making, completion and use of this camera with the movable lens is presented, the character of which is not even attempted to be impeached ; and it is nowhere contradicted.

This camera was completed and put into use between November, 1846, and April, 1847.

The only point which is considered material to be discussed, in this connection, is whether the Stewart Camera embodies the substance and principle of the invention as patented.

If so, the date when it was completed is (at latest) the date of Southworth's invention.

To determine this question it is necessary to ascertain whether the Stewart Camera and the patented camera were so designed as to accomplish similar results and in a similar manner.

In each of them several pictures were successively taken on different portions of the same plate, without removing the plate from the camera, and, in each, the plate was at a right angle with a line proceeding from the object through the axis of the lens.

There was this difference only in the result accomplished by the two methods. With the Stewart Camera —the position of the lens being slightly changed as each of the four successive pictures was taken—the central ray of light proceeded from slightly different points of the object. For example, suppose four pictures of the human face were to be taken; for the first, the left eye is selected as the centre, for the second the right eye, and for the third and fourth, points respectively a little below each eye. Each of the pictures will be perfect, although they will differ slightly—the central point of vision being changed.

This difference, however, is not substantial, but almost fanciful. None of the pictures so taken will be in the slightest degree distorted; all will be perfect, but each one will present a view of the object, which, to a trifling extent, not visible to the naked eye, differs from the others.

The necessary change of position of the lens was a slight one, as will be seen by Exhibit 12, and to show how slight a change in the effect was thus produced, let the human eye take the place of the lens and view, a few feet distant, from each of the four points to which the lens was successively moved, a fixed object.

Each view will be actually different, but the difference is neither substantial nor is it perceptible.

The correctness of these suggestions does not rest alone upon theory or upon common knowledge, but has been practically demonstrated by the defendants themselves. They find it practicable to use as many as nine lenses at a time, each one using a different point as the centre of the object. [See stipulation of parties and illustration pp. 20-21, and Complainants' Exhibit No. 4.]

Suppose that the Stewart Camera had been so arranged that the lens could have been shifted into nine different positions, corresponding with those occupied by the fixed lenses in the defendants' Camera Exhibit

No. 4, it is manifest that the pictures produced by each would be equally perfect.

We therefore claim that it is not only a matter of common knowledge, but that it has been actually demonstrated and conceded by the defendants that *the results accomplished* by the Stewart Camera and by the patented device—by the shifting lens and the sliding plate-holder—are practically and substantially similar.

Is there any substantial difference in the mode of operation?

In one instrument the *plate* is moved while the lens remains stationary, and in the other the *lens* is moved while the plate remains stationary, and the result accomplished by each is the same.

Does the change from one to the other form involve a substantial change of principle? If any one skilled in the art should be informed of either method, would it require anything more than his skill and experience to apply it in the other?

We have seen that here are two parts of an operative machine used correlatively—the plate and the lens; either of these parts being moved, while the other remains stationary, the same result is produced.

From the history of the invention, it is apparent, that Southworth regarded these two forms as alternative methods of applying his invention, either of which could be substituted for the other, and that the selection of one or the other was made to depend entirely upon economy of construction and the requirements of the business.

A patentee is protected from obvious modes, readily adopted, without invention, for accomplishing the same end. [Union Paper Bag Co. vs. Nixon, 6 Fish., 402.] If a person has an invention, and another person looking at the description of it can, from his knowledge of the subject, pass to the other thing that is used, without invention, then the one is substantially the same as the other.

It is not necessary that every unskilled person shall see how he passes.

Johnson v. Root, 1 *Fish.* 351.

In Sargent vs. Larned, the patent was for an improvement in Apple-paring Machines, by attaching the knife block to the rod which moved it, so as to allow the knife block to rotate around the rod at right angles. The defendants, instead of making the knife movable in the rod, made the rod movable in its socket, but the knife block had the same motion; this was held only a change of form and an infringement.

2 *Curtis C. C.*, 340.

In Union Metallic Cartridge Co. vs. U. S. Cartridge Co., 11 Off. Gaz., 1113, the patent was for a machine for forming heads on cartridge shells, in which the shells are carried through a die on the mandrel, and both mandrel and die are moved forward together, forcing the closed end of the shell against a stationary header, and squeezing it down to form the flanges, and it was held to be infringed by the use of a machine in which the *die* remained stationary and the *header* advanced.

Illustrations from adjudged cases might be multiplied, but it sufficiently appears that the mere transfer of motion from one to another of the correlative parts of the same machine works no change in principle, but in form merely; and further, that this proposition is pertinent, controlling and decisive upon the question whether there is any substantial difference in principle, mode of operation, or result between a fixed plate with a movable lens and a fixed lens with a movable plate.

The spirit and substance, the subject matter, mode of operation and result are practically the same.

"The invention * * is shown not only to have been
"made as early as the latter part of 1846, or the first
"part of the year 1847, but * * the same was reduced
"to practice as an operative machine."

This determination of the point, by the lamented Judge, who, it is not invidious to say, was pre-eminent in this department of the law, should stand as the judgment of this Court.

THIRD.—But even if the date of the invention should be regarded as the date of the original patent, April 10, 1855, we insist that there is no credible evidence of prior discovery or prior use by others.

IV.

UTILITY.

This point requires no extended discussion. It is not in controversy, except for the defendants' answer. If, as we shall show, the defendants' have infringed, their own admission is conclusive as to the utility of the invention [pp. 20, 21].

But there is abundant affirmative evidence showing that the invention is of the greatest usefulness [pp. 22–28]. Southworth says the invention has proved very useful, surpassing any other improvement in the apparatus since its discovery. It is universally used by all good operators in the country, many of them having many different cameras to which it is applied [p. 28].

There is not a word of testimony in the case showing, or tending to show, that the invention is not useful.

V.

INFRINGEMENT BY DEFENDANTS.

We are not left in any uncertainty as to exactly what the defendants have done. By an agreement, which will be found at pp. 20, 21, "it is admitted that prior to the "date of the bill, and subsequently to the assignment "last named in the bill, the defendants caused to be "manufactured and sold sundry multiplying camera "boxes, containing certain devices by means of which "photographic pictures could be multiplied in the "manner and by the means substantially as described "below.

"The plate or plates upon which the pictures are to "be taken is placed in a shield or plate-holder, and the "shield or plate-holder may be made to slide upward "and downward as well as from side to side in the "manner as shown in camera boxes, marked 'Exhibit 3' "and 'Exhibit 4,' produced by defendants as specimens "of the multiplying camera boxes manufactured and "sold by them as above."

"The same exhibits also show the registers and con-"trivances by which the distance through which the plate-"holder is to be moved to produce certain desired results, "and by which the plate-holder is held in proper posi-"tion."

"By means of the above-named devices for sliding the "plate-holder after the taking of one picture or of one "group of pictures (the number depending upon the "number of lenses used), another portion of the plate, or "another plate in the same plate-holder is brought into "similar position as to the focus of the lens, thus succes-"sively producing pictures or groups of pictures exactly "similar or alike."

"For further description, page 158, and the first two-"thirds of page 159 of Anthony's 'Photographic Bulletin,' "Vol. 4, No. 5, for May, 1873, marked 'Exhibit 5,' are "made part of the case, and it is admitted that the de-"fendants are, and heretofore have been, the publishers "and proprietors of said Bulletin, and caused the publica-"tion of said pages."

"The defendants admit that the devices for sliding and "for regulating and retaining in position the plate-holder "above described and referred to are useful, but they do "not admit that they have infringed any patent named or "referred to in complainants' bill."

This was a stipulation made in the progress of this suit, and the saving clause contained in the last paragraph was inserted to serve the purposes of the suit rather than the ends of truth.

We are quite willing to take the judgment of the defendants themselves as to whether or not they have infringed. They were largely engaged in the business of photography, and in manufacturing and selling photographic apparatus, and therefore what they *truthfully* say, comes with the weight of experience and familiarity with the subject, and with double force, if in the shape of a declaration against their own interests.

Before this suit was commenced, and before the defendants had conceived the idea that it would be a profitable thing for them to defeat the patent, we find them making this declaration [p. 48]:

"We have used multiplying cameras of different "makers, and have paid Mr. Ormsbee for the right to "do so.

"(Sgd.), E. & H. T. ANTHONY & CO."

At this time Mr. Ormsbee was the owner of the patent for New York.

Again, at page 100, we find the defendants' signatures, among many others, to these declarations:

"NEW YORK, 1865.

"We, the undersigned, having seen the decision in "the U. S. Circuit Court, held at Boston, June 14th, "1865, relative to the multiplying camera box in the "case of Simon Wing vs. Charles F. Richardson, believe "the same to fully sustain the claims of the patent now "held by Messrs. Ormsbee & Wing."

"NEW YORK, Feb. 1, 1868.

"This is to certify that we, the undersigned, manu"facturers and dealers in photographic materials, have "discontinued the sale of multiplying camera boxes "which infringe on the Ormsbee & Wing patent, except

" when parties ordering the same comply with the pro-
" visions named below, legal notice having been given
" us this day to that effect. All parties ordering boxes
" with sliding movement which infringe on said patent
" must remit $50.00 with their order, when a license,
" signed by the patentee to use the same, will be fur-
" nished with the box."

Neither of the defendants testified in this case, and they have made no attempt to explain or qualify these admissions, the plain purport and effect of which is, that the cameras made and sold by them were, in every substantial feature, similar to the patented invention. In this determination they were not alone, but the same opinion seems to have been shared by the leading manufacturers and dealers at the time. A comparison of the camera boxes, Exhibits 3 and 4, with the model which accompanied the specifications of the patent, will reveal the fact that they are substantially identical, and exactly so, in every detail but one. They have the fixed lens and the sliding plate-holder, having the vertical and lateral motion, and produce precisely the same result as provided for by the patented device, and differ only in this one incident, that, instead of having the block L, as the means for holding the plate in the upper corner of the frame, they use at pleasure a ratchet, or a register, or pins with a spring or block. [See complainants' Exhibits Nos. 3 and 4, being samples of defendants' cameras.]

The object of the piece L, which is mentioned in the specifications, and that of the devices used by the defendants was the same—to hold the plate in position.

It will be obvious at a glance that any one of many well known mechanical contrivances would accomplish the same object, as, for instance, a spring, a ratchet, a lock, a pin, a hook, or a wedge; indeed an examination of the testimony will show that there are many devices for accomplishing this object which are regarded, even by the defendants' expert witness, as mechanical equivalents for the piece L. [See testimony of William C. Hicks at pages 212, *et seq.*]

The expert testimony of the complainants shows clearly that these various devices are mere mechanical equivalents [p. 24, 29].

Great stress is laid upon the statement in the specification that "the guide piece L or some equivalent there-"of is absolutely essential, as the attempt to hold the "block I by hand would shake the camera."

It was not necessary that the inventor should have inserted the words "or some equivalent thereof," in order to protect himself against infringement by the use of known mechanical equivalents, but it is suggestive that the inventor regarded the piece L as a mere incident to his invention, and knew that there were many other methods by which the plate could be held in position, and all that he regarded as absolutely essential was, that there should be some mechanical contrivance, instead of the human hand, to accomplish this object, and that the piece L was one such.

With all becoming deference to the opinion of the Court below, we here say, with absolute confidence, that the block L and the various devices used by the defendants to accomplish the same result, are substantial equivalents, and that the decision of the Court cannot be sustained upon the ground stated in the opinion [p. 324 *].

VI.

NOVELTY.

Under this head there are some general observations to be made, but they will be more readily understood and applied after a consideration in detail of the testimony presented by the defendants for the purpose of showing that others knew of and used the patented device, before its invention by Southworth.

ALEXANDER BECKERS.

It is not pretended that Beckers made or used anything in the semblance of the invention before 1852, so that his apparatus need not be considered if the date of the invention was as early as 1847.

But the testimony is not sufficient even to show *any* use by Beckers before the date of the patent.

He claims that he made three plate-holders, by which he was enabled to take a series of pictures without removing the plate-holder from the box; the first was a revolving plate-holder which he claims was made in 1852 [p. 150]. But he found disadvantages in this; it was not satisfactory, and he "saw it last about 1854 or 1855; it was "lying among a lot of other things not used." This at best was a mere experiment, resulting in failure *and abandoned* [p. 151].

The second was a small square plate-holder moving into the four corners of a larger plate-holder, and this he thinks he made at the end of the summer or fall of 1853 [p. 152]. The third was like the second, only larger, and he claims to have made it in the winter of 1853-4.

His testimony was taken in August, 1874, and he was relating things which he claimed happened over twenty years before. The unaided memory is not to be trusted in matters of this kind, and he is not able to refer to a single circumstance, having the slightest relation to the plate-holder, which would tend to establish the date.

He is asked [p. 151]: "State what means you have
" of fixing the time when you made the first revolving
" plate-holder you have referred to?" A. "I recollect
" that I found the image of this revolving plate-holder
" not quite satisfactory after having used it for some
" time, and studied how to make a better arrangement,
" and found one, but found no time to make it at once,
" because I had to move to another place; this was the

"1st of May, 1853, that we moved from 201 to 264 "Broadway, as shown by the rent book."

As to the second plate-holder, he is asked [p. 152]: "When did you make the second plate-holder you have "described, and what means have you of fixing the "time?" A. "I made it in 1853, as soon as our new "business at No. 264 Broadway was in order, and I had "time to make this new arrangement."

The only fact, then, which he can recall is one which bears no relation to the event whose date he attempts to fix.

There could be no natural association in the mind of occurrences so dissimilar as moving a place of business and manufacturing a newly discovered machine.

Naturally there would have been many incidents closely identified with it and capable of proof, such as the obtaining of the rough material, the price paid for it, the person from whom obtained, the name of the person whose picture was first successfully taken with the apparatus, the picture itself, book entries showing some of these things.

Beckers had sufficient familiarity with the art to be able to appreciate the great importance of his discovery, if it was new with him, as he claims it was. But he took no step toward securing a patent, made no attempt to prevent others from availing themselves of his invention, and finally sold the apparatus with his other property in 1858.

The date testified to is suspiciously near the date of the patent, and Becker's apathy in the matter can only be explained on the very probable theory that he knew that what he "discovered" had been already patented by Southworth.

In the Schoonmaker case, comment was made because Becker's partner, one Victor Piard, was not produced to corroborate him.

Therefore he is now brought forward for that purpose, and does it with a vengeance; and whereas Beckers had fixed 1852 as the date when he made the first or revolving plate-holder, and 1853 when he made the second, Piard says that it was in 1849 that the second plate-holder was made [p. 154], *a variance of four years*, which, as regards the correctness of Beckers' recollection, might as well have been four years later (and after the patent) as four years before the time fixed by Beckers. Piard, on his cross-examination, states incidents to support his recollection, which are quite as pertinent to the event as the one stated by Beckers.

He says it was made "the first year of our partner-"ship" [p. 155].

Being asked [p. 154], when did your partnership begin? he answers: * * "It began on the 14th of Novem-"ber, 1849." He says he actually saw Beckers make the second plate-holder, and that he "was the instigation of "him making it" [p. 155].

Now it is not pretended by defendants that any reliance is to be placed upon Piard's statement of the date. On his re-direct examination an attempt is made to show that he was mistaken in it, and that he was confused by the fact that there was a renewal of his partnership with Beckers in 1852, and that when he spoke of "the first "year of our partnership" he might have meant the first year of the renewed partnership.

A less charitable judgment might be passed upon Piard's testimony, but it is sufficient for our purpose that we use it simply as an illustration of the fallibility of human memory. It being conceded that one of these witnesses is wrong in his date, the reasons for such a concession are quite as applicable to the other, for they were both in the same situation, had the same knowledge of the event, and were equally qualified to testify concerning it.

John Stock is next called to corroborate Beckers [p. 157].

He produces the original plate-holder which Beckers claims he made in 1853, and says he bought it in 1862 of "Mr. Durand," meaning, perhaps, "Morand," to whom Beckers says he sold it in 1858 [p. 151]. He also produces a copy of the plate-holder made by himself. He is not willing to part with the original, but does not give any reason why, nor is it easy to imagine any satisfactory reason, unless it was feared that a critical examination of it would reveal the fact that its origin was of a later date than the patent. Stock was a manufacturer of photographic material [p. 157]. He bought this plate-holder in 1862—seven years after the patent and two years after the re-issue [p. 157].

He then went into the business of making multiplying cameras, and whether or not *he* was defiant of the patent, it appears that the leading houses in the business obtained a license under the patent before using Stock's Cameras [p. 48]. Doubtless they had investigated the merits of this claim of "prior discovery."

John Bossardet was an employe of Beckers & Piard. He testifies to the naked fact that Beckers used a plate-holder like defendants' Exhibit No. 6, and he says: "This must have been the second;" and again, in the same answer, "This must have been the third one" [p. 157.] He produces a picture which he says he took with this plate-holder. Whose it is he doesn't know, and when he took it he cannot tell. This is a single picture; it is marked "Defts' Exhibit No. 7;" and he is unable to produce a plate having two or more pictures on it, or presenting any appearance of having been taken with a sliding plate-holder. When Mr. Beckers sold out (in 1858) he took it home, "and kept it just for the "curiosity of the thing" [p. 158].

It is not apparent that there is anything curious in the picture itself. Was it "a curiosity" in 1858 because taken with a sliding plate-holder, a novelty to him then?

This witness was in the employ of Beckers when he testified, and his testimony bears the marks of preparation.

Augustus Semmendinger is the last witness called to sustain Beckers. He was deeply interested in defeating the patent, having been himself sued upon it; but his testimony is too vague and uncertain to have any weight whatever. He is asked: "Q. Look at Defendants' Ex-" hibit No. 6, and state if you ever saw a sliding plate-" holder substantially like it in mode of construction" and operation, and if yea, when first, and where?" "A. I have seen them in about the year 1853 in Alex-" ander Beckers' place on Broadway, New York."

The expression, "about the year 1853," is quite elastic enough to stretch beyond the date of the patent, and if there was any certainty of recollection that, it was before that date, it would have been clearly expressed.

PHILIP HAAS.

Enos B. Foster testifies that, in 1847, he saw at Philip Haas', in New York, an apparatus having a sliding plate-holder, so arranged that a number of pictures could be taken, by moving different parts of the plate successively before the lens, without drawing the plate-holder from the box. He produces what he claims to be a model or duplicate of that apparatus [p. 159]. It is marked "De-" fendant's Exhibit No. 8." It embodies the principle of Southworth's invention, but has a jointed spring for holding the plate in position instead of the block L.

The original camera and plate-holder are not produced, nor is their non-production accounted for. Instead of that we have a model manufactured for the purposes of this case.

In 1847, when Foster claims he saw this plate-holder, he was fifteen years old, and twenty-seven years afterwards he assumes to testify positively as to the date, and to describe with accuracy and in detail an instrument which he had not seen for nearly a generation.

In the case of Wing vs. Richardson, this same Foster testified, as also his employer Haas, and a co-employé Williamson, both of whom are now dead.

The comments of Judge Clifford in that case are so effectual in the destruction of this and other similar testimony that they are here repeated:

" Evidence offered by respondent to show that others " had made similar machines prior to the date of the in- " vention in question, is not satisfastory. Recollections " of Marcus A. Root, after a lapse of sixteen years, are " quite too indistinct and uncertain to set up a lost " machine to defeat a valuable improvement, and deprive " a meritorious inventor of the fruits of his toil and labor. " Care should be observed in investigations of this na- " ture to guard the public against a growing propensity " on the part of patentees to expand their patents be- " yond what they ever invented, and at the same time to " protect them against the equally unjust claims of pre- " tentious persons who always stand ready to prove that " they are the real inventors of what has been patented " to another. Neither have any merit and both should " be discouraged.

" Dates stagger a good memory, even when the inquiry " has respect to recent events; but, after the lapse of " sixteen years, under the circumstances of this case, I " do not think it safe to rely upon the unsupported " statements of this witness. They are too uncertain, " inconsistent and contradictory. Statements of Philip " Haas are no better, but in fact are less reliable. He " contradicts himself, is contradicted by the circum- " stances, and by the testimony of the other witnesses in " the case. Attempt is made to support his statements " by the testimony of Enos B. Foster, but it can hardly " be said to have that effect. When he went into the " employment of the other witness he was but fifteen

" years of age, and they both admit that the alleged machine is lost. They do not attempt to testify to but " one picture now in existence taken with that machine. " Their statement is that it was lost in 1850, and they " afford no reason to infer that any of its parts are in " existence. Theory is that it was made by one Saxton, " in 1840, under the directions of Philip Haas, and that " it was stolen from the owner's place of business. But " the proofs show that he never made another, and ever " after used a machine constructed according to the old " method. He gave a second deposition, and in that he " states that he was mistaken, that it could not have " been made as early as 1840, but thinks it was four " years later. Complainant called a witness who worked " for Philip Haas the latter part of 1846 and for the " most part of 1847, and he states that he never saw any " such machine in his shop, although he was an assistant " operator and had the fullest opportunity to see all the " modes or machines in the apartments. He had for " eleven months, as he states, the general charge of all " apparatus and material and everything that pertained " to the business of his employer, and it is sufficient to " say that his statements are utterly inconsistent with " the testimony of the principal witnesses for the respondent. In view of the whole evidence, I am of opinion " that the respondent has not proved that the patentee " in this case was not the original and first inventor of " the improvement described in his re-issued letters " patent."

Foster says that he saw the Haas plate-holder " in " 1847 " [pp. 159 and 175], but at what time in the year he does not say, and such a statement is not sufficient to warrant any presumption, much less a conclusion, that it was in the early part of that year when, at latest, Southworth's invention was made.

Silas Selleck is the only other witness who testifies in support of the Haas plate-holder.

He was not examined in this case, but a deposition given by him in December, 1873, in the case of Wing vs. Tompkins, was used under stipulation [p. 196].

He says he saw this Haas plate-holder in 1845 [p. 197], twenty-eight years before he testified. He was 45 years of age in 1873, and therefore a boy of 17 when he claims to have seen the plate-holder, and he fixes his dates entirely "From a retentive memory"!! [p. 199]. He does not produce a single picture taken with the Haas plate-holder; he last saw it in 1847 or 1848 [p. 200]; he does not associate it with any other fact; he produces a "fac simile" of the plate-holder [p. 197], made for the purpose of defeating the patent and under his own directions [p. 200].

He had been in correspondence with Tompkins, in whose interest he testified; had received from him in advance the interrogatories he was called upon to answer [p. 201]; gave his time for six days to the giving of his testimony [p. 196]; caused the model or "fac simile" of the plate-holder to be made according to ideas evolved by his "retentive memory," and is swift to argue, upon his belief, while on the witness stand, in wholesale condemnation of the patent [p. 199].

In the face of all this he pretends to be a disinterested witness! A claim so manifestly false should be sufficient to destroy his testimony, even if it was not preposterous on its face.

Selleck says he left Haas and went into the employ of M. B. Brady in 1847 or 1848, and remained until 1852. He did not continue the use of the Haas plate-holder there, and it does not appear that he ever spoke of it [p. 198]. But he says he used there throughout his employment another method of sliding the plate, by which, in taking locket pictures, two were produced on the same plate [p. 198]. The apparatus is not produced, nor is the evidence that it was used worthy of the slightest credence. On the contrary, if it were true that one of M. B. Brady's employes used a sliding plate-holder for four or five years before the patent, why do we find the same M. B. Brady afterwards paying a license under the patent for the same thing? [p. 48].

This testimony falls to the ground from its own weakness, and though nothing is needed to keep it there, the complainants, in rebuttal, show that in 1847 Mr. Ormsbee called at the place of business or daguerrean rooms of Haas and saw Selleck, who showed him specimens of pictures, four on a plate, and explained how they were produced. Selleck described the method. "It was to "take two pictures on one end of the plate, then go into "the dark room and turn the plate end for end and take "the other two pictures" [p. 46]. In taking pictures in this manner no one of the four pictures on the same plate could be taken in the focus or centre of the lens or field of the lens [p. 46]. And yet this plan, clumsy in operation and imperfect in results, was the one used by Selleck *two years after he knew of an equivalent of Southworth's plan*, and at a time when he had the famous Haas plate-holder at hand!!

It will be remembered that in the Richardson case both Haas and Foster testified. On the direct examination of Foster in the present case [pp. 159–160] care is taken to avoid asking him about a certain picture of Haas' wife claimed to have been made with this plate-holder, and which Foster says he saw in March, 1847.

The matter was brought out only on cross-examination [pp. 174–5].

Why not on the direct? Here were four pictures on one plate [p. 69], and if they were taken in the manner described, what better corroborating proof could be had? *It was known that the pictures themselves would reveal the falsity of the claim.*

The differences and inequalities in them would disclose the fact that they were not taken by any such method.

This is clearly shown by Alvan Clark, the world renowned optician [p. 81]; by James W. Black, probably the most experienced practical photographer in New England [p. 87]; by Mr. Southworth [pp. 69, 70, 73, 74, 75]; by Nicholas Pike, a distinguished writer and practitioner of the art [pp. 130–131].

They clearly show that these pictures were taken, not by sliding the plate but by tipping or swaying the camera, a method which caused the rays of light to pass through the lens and strike the plate obliquely, producing differences between the pictures and distortion in each of them.

JAMES B. SINSABAUGH.

It is sufficient to say of the apparatus claimed to have been used by Sinsabaugh that it bears no resemblance whatever to the patented invention. He says: "The way "that I got the idea was this: sitting a person for a pic-"ture, there was another lady ran past the camera and "hit the leg of the box a little. After the lady had sat "sufficiently, I took the plate out and applied it to the "mercury bath. When I came to look at it, after having "had it in the bath sufficiently, I found I had two good "impressions; this gave me the idea [p. 161].

"He used a common box and a common plate-holder "[p. 162]. The sole alteration was a half partition [p. 163.] "It was much trouble to make pictures with it, and they "were uncertain [p. 162]. In taking the picture the "sitter was not placed directly in front of the lens;" he was placed a little on one side [p. 163]. Of course pictures thus produced were distorted for the reasons already shown, and he admits it when he says "I did not "get perfect pictures every time and could not do so." [p. 163]. No wonder that he made "but very few" [p. 162.]

Sinsabaugh's experiments resulted in failure, and were abandoned. The difficulties he succumbed to, Southworth overcame.

There is just the same difference between Sinsabaugh's apparatus and Southworth's that there is between failure and success.

But if it had been otherwise, his testimony is so vague and uncertain, and his memory shown to be so unreliable, that no dependence can be placed upon his accuracy as to dates.

He was examined in 1874. His shop was burned "between 1860 and 1865," although he is not positive that he is correct, even giving to his memory a range of five years.

This, too, with relation to a subject likely to produce an indelible impression, and happening, perhaps, twenty years later than his abandoned experiments, whose date he assumes to fix.

Enough of Sinsabaugh.

RODNEY H. DEWEY.

Whatever Dewey did was not done before 1852, four years after the date of Southworth's invention, and therefore goes for nothing.

He says he used an apparatus in 1852, so devised that two or more pictures could be taken on the same plate without removing the plate-holder from the box [p. 164].

Being asked to describe it, he says: "In the boxes "used in those days the plate-holder entered from the "top, pushing down into the box, which produced more "than one impression on the same plate" [p. 164]

It is to be understood, from this, that these were the boxes then in general use. If so, there should have been no difficulty in proving it by a cloud of witnesses, some one of whom, at least, could have produced such a box, and shown by incontrovertible evidence when it was made.

The box is not produced, but the witness gives two vague and widely differing descriptions of it [pp. 164 and 165]. He says: "Mr. Schoonmaker, of the

"City of Troy, came to my place, and carried it to Troy "with him, where Mr. Wing had a suit against him" [p. 165].

Why did Schoonmaker want it if it was a thing in common use in 1852? Schoonmaker was examined in this case [p. 208]. If the apparatus was such as Dewey describes why was it not produced? No picture made with the apparatus is produced; no book entry or other corroborating circumstance referred to, and Dewey says: "I don't remember how long I used it, it was so long ago." We may fairly place a like estimate on the memory of the witness, and insist that whatever experiments Dewey made were made after the patent.

He said he got this camera-box from Sisson & Parsons of Albany, New York [p. 166]. Parsons is examined [p. 206], and Sisson might have been [p. 208], but neither are called to corroborate this statement or the description given by Dewey.

It is certain that no patent was ever adjudged invalid upon testimony such as this, conspicuous for its vagueness, contradictions, and significant omissions.

Charles Thayer.

He is in the clothes wringer business; was engaged in the photographic business from 1848 to 1869, say twenty-one years.

First took more than one picture in the camera without removing the plate-holder from the camera, "some "twenty-five or twenty-six years ago" [p. 179]. Since he was examined in Sept., 1874, this would be in 1848 or 1849, when he first commenced in the business. He attempts a description of the instrument, and says he used it "some twenty-three years," *or two years longer than he was in the business.*

He does not produce the instrument nor any picture taken with it, but, greatly needing some support, is asked on the direct examination: Q. "What is it that you

" have to show that enables you to fix the time?" and he replies: "A. I have a picture of a lady, two pictures on " the same plate—one with her artificial teeth in her " hand and the other with the teeth in her mouth, to " show the effect of the dentist's work" [p. 180].

Being asked on cross-examination who the dentist was and where the picture could be found, he answered that it was Doctor Waters, of Beacon street, Boston, and that *he* had the picture [pp. 180-181].

Dr. Waters is found by complainants and testifies in rebuttal [pp. 49-52]. He produces the pictures referred to by Thayer—two on the same plate—and they are marked, " Exhibit 26." He says they were taken in 1849, the first of the year, * * for the purpose of showing the change effected by the introduction of a set of teeth made by him, the change being greater than usual. He desired to preserve the appearance of the lady with and without the teeth, not only to mark this unusual change, but that he might observe any other changes as time progressed. He applied to Thayer, whose place of business was near by, who couldn't help him to what he wanted; that is, he could not make two pictures on the same plate [p. 51], until Dr. Waters suggested to him the taking of the two pictures by swinging the camera [p. 50]. This was an old method, and, as we have seen, produced distorted pictures.

The pictures were taken in this way, and not in the manner which Thayer attempts to describe. Thayer charged nothing for them, taking the instruction of Dr. Waters as sufficient pay.

This was in 1849, and two years after the invention, and the only method by which he could take two pictures on the same plate was then first disclosed to him by Dr. Waters, and it was an old one, radically different from the invention of Southworth.

An affidavit of Thayer, made in June, 1868, is in evidence at p. 181, wherein he described the method by which "about nineteen years ago,' he made four pictures on a plate. He said he used the ordinary camera-box and plate-holder belonging to it. The axis of the lens was not on a line with the centre of one quarter of the plate; "the camera stood aslant to-"wards the object to be pictured;" and he adds, "until "I saw the Wing & Ormsbee cameras, 'Albert S. South-"'worth, patentee,' I never saw or heard of any cameras "except those in common use eighteen or twenty years "since."

Edward S. Dunshee.

The testimony of this witness, as taken in the suit of Wing against Tompkins, was used in this case by stipulation, and appears at page 183 *et seq.*

He says that he made more than one photographic picture upon the same plate, by bringing different portions of that plate, successively, into the field of the lens, without removing the plate-holder from the camera-box, and that he did so in the fall of 1846.

It may here be remarked that this, and all of his testimony, which is intelligible, is brought out either by questions which are grossly leading, or answers previously prepared in writing.

He is asked to describe his method, but it seems he cannot do it, except by reading a written description, prepared for him before his examination.

The written description is found at page 184. He does not produce the original camera which he claims he used, but, as the only substitute therefor, he produces a model of the apparatus he claims to have used, which is marked "Exhibit D, Tompkins."

He did not make this model; does not know who made it, and says he gave no instructions in regard to its manufacture.

When examined outside of the written answer, and the manufactured model, he is hopelessly at sea, and it is palpable that his testimony was manufactured for him.

Indeed his evidence has already been passed upon by Mr. Justice Shepley, in the suit of Wing against Dunshee, and a decision announced against Dunshee, notwithstanding which, he has the temerity to testify in this case.

But even if his testimony was truthful, the method described by him is entirely different from Southworth's device.

He is asked, at page 188, whether he has any camera-box or apparatus like "Exhibit D, Tompkins," and says he has nothing just like it; but adds, "I have similar "boxes of different styles," and promises to produce the style of boxes he uses; and, (the examination being adjourned to the following day) he is asked, at page 190, to produce the same, and says, "I cannot produce it," although he claims that he had four such, and they were at the time of his examination only thirty rods distant from the place where he was examined.

There is nothing approaching a reason for his refusal to comply with his promise and produce his camera-box, excepting that, pending the adjournment, Tompkins had *seen* him.

Dunshee claims that he modified his mode of taking two or more pictures in 1848 and 1849, and that in this modified method he used a camera-box made by R. A. Lewis of New York [p. 189], which "had a similar shield "to hold my plates, and operated in the same manner "as the one I had of Plumb" [p. 190]—meaning that it contained the devices by which he was enabled to make more than one picture on the same plate.

This Lewis box Dunshee says he bought in the Spring of 1847.

As a complete refutation of this perjured testimony let us turn to page 48 of the record, and read this certificate, Exhibit A: "This is to certify, that we have used

" for several years one of E. Corbett's, and also John
" Stock & Co.'s, as well as other make of multiplying
" cameras, receiving the right of use by license issued to
" us by Mr. M. Ormsbee.

(Signed) * * *

" R. A. LEWIS."

It will not be supposed for a moment that R. A. Lewis would have paid royalty for the use of the Southworth invention if he had manufactured the same apparatus before the date of the invention.

It is not surprising that, in the argument below, no mention is made of Dunshee, by counsel for the respondents. A defence is only injured by the unscrupulous resort to such means for its support.

ARTHUR COBDEN.

In the defendants' answer, page 12, they allege prior knowledge and use by Cobden at Troy, New York.

Cobden first came to America in 1851 or 1852 (page 203), and first commenced business in Troy in 1862 or 1863. He, therefore, could not have used the invention at Troy until some eight years after the letters patent were issued.

What he did in London, when a boy of thirteen, was clearly inadmissible under the answer, and was seasonably objected to. But even if it had been admitted in evidence, his statements are too vague and unreliable for credence; and as to his recollection of dates [see page 204, 26th, Re. D. Q.], from which it appears that he was unable to account for the time he had spent in this country, excepting 19 years out of 23.

Further, as to Cobden's accuracy and truthfulness, he says he came to this country in September, 1851 or 1852, and remained with J. A. Mayall, in London, until the time when he left for America, except two weeks.

He further says, that he was employed by Mayall, in

London, from the time when he was 13 until he was 20 years old [p. 202]. Therefore, at latest, Mayall was in London seven years before September, 1852, or in 1845, and from that time until September, 1851 or 1852, *if Cobden's statement is true.*

But Mr. Southworth testifies, at page 77, that he knew the same Mayall, and that he removed from Philadelphia in the latter part of 1846, where he had resided "certainly a few years" before that.

George McKown.

This witness is asked the stereotyped question: "Q. "Did you ever have and use a camera-box and plate-"holder so constructed as to allow more than one pic-"ture to be taken without withdrawing the plate-holder "from the box; and if yea, when first and where, and "please describe the apparatus?" He answers that he did "in the year 1852–3, I think it was." He is not certain even as to this date, which is after the date of Southworth's invention. He does not produce the camera-box which he claims to have used, nor account for its non-production, nor does he produce any model of it, nor any picture taken with it, nor does he say where he obtained the box, nor refer to a single circumstance in corroboration of his statement.

He attempts a description of his method, but it was unintelligible to the defendants' counsel, who asked repeated questions in the hope of getting further light.

He is asked how far he pushed in the plate-holder, but he does not "exactly recollect."

Again, whether after he had pushed it in, any part of the plate remained outside of the box. He rather thinks there did, but is not positive.

He is asked to explain a little more clearly, etc., but "cannot say as to that."

He is asked: "Q. The hole through which the light came was in the middle of the box, was it; or, if not there, where was it?" and answers: "It was made to correspond with the image on the ground glass of the camera."

He is further asked: "In what part of the face of the box, turned toward the object to be taken, was the opening where the lens was placed?" and answers: "I can't get the meaning of your question."

Now, we may say that it is impossible to get the meaning of the testimony of this witness. The defendants' counsel could not understand him, and the defendants' expert, William C. Hicks, thinks "it is a little ambiguous" (page 219).

There was no cross-examination of this witness, and there was no necessity for any evidence in rebuttal, but evidence was introduced by complainant, which shows conclusively that McKown's statement was false, and that the mode claimed to have been practised by him could not have produced two pictures on the same plate.

McKown was asked by defendants' counsel: "Q. How did the box differ from ordinary camera boxes?" "A. The box itself differed in regard to the plate-holder, the plate-holder being larger than the usual."

This is the only difference which he indicates (page 205).

Mr. Wing testifies, page 58, *et seq.:* It appears that he took an ordinara camera-box, such as had been in use for many years, and which had been in his possession since 1856, and which is marked "Complainants' Exhibit 46," and followed Mr. McKown's description of his method in arranging his plate-holder and shields, by using complainants' "Exhibit No. 48," and attempted to take two pictures on the same plate. The result is shown by complainants' "Exhibit No. 47."

The camera-box, like all ordinary camera-boxes, had the lens-tube in the centre of the front of the camera, and therein was in precise conformity with McKown's testimony. But the result shows that pictures taken with such a device overlap. Two *cannot* be taken on the same plate.

The defendants seek to overcome the effect of this testimony, in rebuttal, by the evidence of Morton (page 261) and Hicks (page 219).

But in order to sustain McKown, they undertake to describe a method which McKown did not use, involving the placing of the lens at *one side*, instead of in *the centre* of the front of the camera.

McKown's testimony does not deserve so lengthy a consideration as we have given it. It was too weak to stand, and could not be put upon its legs by any explanations or inventions of experts.

SETH E. PARSONS.

The apparatus which he used, he says he *thinks* he ordered in the fore part of 1851, as near as he can recollect (page 206). This was after the invention of Southworth, and he has no certainty of recollection; does not produce the box, nor any picture taken with it, nor any model of it.

The method he describes has no resemblance to Southworth's. He divided the camera-box into two parts, with a partition running lengthwise through the box (page 206).

It is obvious that he could not thus obtain perfect pictures, as he could use but one half of the lens at the same time.

He is called, in rebuttal, by the complainants (pp. 90–91), and he says that the pictures taken by him with the apparatus described in his testimony for the defendants, were not each taken in the centre or best part of the field of the lens, but on one side; that he is acquainted with Southworth's patented device, and never knew or heard of anything like it prior to the date of the patent, April 10, 1855.

CHRISTOPHER C. SCHOONMAKER.

This witness was the defendant in Wing against Schoonmaker, and testifies at page 208, *et seq.*

He says that in the winter of 1848 and 1849, he used a camera box "screened so that half of the light or field "of the lens was shut off entirely from the action of the "rays through the lens. The plate-holder was shoved "in half way, the slide before the plate withdrawn half "way; the picture was then made on that exposed half "of the plate, and the plate-holder was shoved entirely "in the box; the screen or slide was pulled entirely "out, and another picture taken on the other half of the "plate."

If this were true, it was after the date of the patent, and bears no resemblance to the patented invention. Perfect pictures cannot be produced by splitting camera boxes and lenses into halves.

He further says that he bought out Meade & Brothers in the spring of 1852 (page 209, corrected page 212), and that he found among the stock of Meade & Brothers "an attachment to a camera-box, with a plate-holder "making five pictures on one plate without removing "the plate-holder from the frame or box. The frame "or attachment to the box was fixed so as to go on the "rear of any ordinary camera-box with an aperture in "the centre. The plate-holder was held to this frame "by a spring, and moved to each corner of the plate, "and also moved to the centre, making one picture in "the centre" (page 209).

He thinks he used this about two years, and says he left it in the gallery purchased from Messrs. Meade when he sold out (page 210) to Messrs. Wood Brothers (page 211).

He does not produce either of the devices which he claims to have used, nor the model of either of them, nor any picture taken with them, nor is his evidence corroborated by any circumstances or by any other witnesses.

On the contrary, the evidence in rebuttal is overwhelming, and shows that Schoonmaker's statements are untrue.

WILLIAM W. WOOD was called in rebuttal, and his testimony appears at pages 106, *et seq.*

He was one of the firm of Wood Brothers, who purchased the business from Schoonmaker.

He was employed by Schoonmaker from the summer of 1855 until the spring of 1857, and says: "My duties "were those of a general operator or workman at all "parts of the business that was being done at that "time" (page 107).

He further says that he never knew of or practised any method of making more than one picture on a plate while in Schoonmaker's employ.

He says: "My brother and I practised a method after "I left Schoonmaker, by two tubes at one time, putting "the plate in position to the sitter so as to expose two "tubes at one time, instead of one tube—it makes in "that way two pictures. But I don't think I ever practised that while with Schoonmaker, though I may "have done so."

Even if he did do so, the two fixed tubes in an ordinary camera-box present nothing resembling the patented invention.

Wood would have known it if any multiplying camera had been used by Schoonmaker before he sold out his business.

He was shown complainants' "Exhibit Bride No. 1," and testified that after he had purchased of Schoonmaker he came across a diaphragm of that kind, and says "there were some old beams in the workroom, no "ceiling over them. I found, to the best of my opinion, "that diaphragm lying up there—waste, I suppose."

This shows a worthless, experimental and abandoned device, in no particular like that of Southworth. Wood found this diaphragm in 1857 or 1858, and it remained in his rooms until 1866, *but he never used it* (p. 108).

JOHN H. HALLENBACK was employed by Meade & Brothers from 1845 to 1850 (p. 87).

He describes a mode by which, *on one occasion*, seven pictures were made on the same plate. He remembers no other instance, in the whole five years, when more than one picture was taken on the same plate, and the device used on this one occasion bore no resemblance to Southworth's invention.

After Schoonmaker bought out Meade Bros., Hallenback was in his rooms once or twice a week for a year, and never saw or heard of any such apparatus as Schoonmaker describes.

HENRY MCBRIDE was an operator for Meade Bros. for about five years before they sold out to Schoonmaker and moved to New York (p. 91). No such method for taking pictures was practised there as Schoonmaker describes. No such apparatus as he describes could have been purchased by him as a part of Meades' stock.

He describes two methods by which more than one picture was taken on the same plate. By the first, two were taken, and simply by the old plan of moving the camera sidewise. In the second method, a frame like "Exhibit Bride No. 1," having five openings and slides to cover each of them was placed in front of the plate-holder. Only one of these slides was withdrawn at a time, and, for the taking of each successive picture, it was necessary to move the camera. *The old plan again* (p. 91).

He says that during the time he was employed by Meade Bros. he never knew or heard of any method of taking more than one picture on the same plate without moving the camera-box (p. 93).

If the Meade Bros. had used in Albany anything substantially like the valuable discovery of Southworth, they would have continued its use after their removal to New York; but it does not appear that they did so. Southworth was frequently in their rooms after they went to New York, but no such apparatus was in use there or elsewhere in New York to his knowledge before the date of the patent (p. 78).

SAMUEL J. THOMPSON.

His testimony appears at page 221, *et seq.* No camera-box or plate-holder, nor any model of either, nor any picture which he ever took with the sliding plate-holder are produced in this suit. Nor does Thompson give the name of any person whose picture he ever took with a sliding plate-holder.

In answer to a leading question on page 222, he says he first saw and used, in the fall of 1847, a camera-box in connection with a sliding plate-holder which made more than one photographic picture without removing the plate-holder from the camera-box.

The only description of this apparatus which he gives is found on pages 223 and 226, and is as follows:

"Q. Please state how the principles and operation of "the camera as used by yourself and Cook, with the "sliding plate-holder, as before described by you, and "as used by you and him in making pictures, compare "with the principles and operation of the camera des-"cribed in the claim of the plaintiff in the re-issued "patent in this suit?" "A. The principles and the "operation are the same—that is, in making pictures "by myself and Cook, we worked upon the same prin-"ciples, and used the same mode of operation" (p. 223).

[Thompson's testimony was taken in the Schoonmaker suit, and it was stipulated that it might be read in this suit (p. 221).]

On page 226, Thompson refers to a camera marked "Exhibit O, Schoonmaker" (not in evidence in this suit), and a picture, "Exhibit P, Schoonmaker" (not in evidence in this suit), and says that the camera, "Ex-"hibit O," was the same as that used by him in 1847, and he says, "It is so constructed as to cut off one half "of the light from the plate, while I made one picture "on that end of the plate exposed, and then the plate is "inserted fully into the camera-box, by which the other "half of the plate is exposed to the light, and thus a "second picture is taken" (p. 226).

It is evident that this witness attempted to describe the same apparatus that Schoonmaker claimed to have used, and our remarks upon his testimony and the evidence in rebuttal thereof apply equally to Thompson.

The testimony of Thompson is expert testimony, but he is not shown to have the qualifications of an expert. On the contrary, he is asked at p. 226: "Q. Can as perfect a picture be made when the sitter is on an angle "with the lens as when sitting in front of the centre of "the lens?" "A. It can."

This is manifestly untrue. [See p. 78.]

By comparing the evidence of Schoonmaker, McBride and Thompson, it will be quite evident that if Thompson ever saw or used a device for taking two pictures on the same plate, before the date of the patent, it was the old plan of moving the camera. *Indeed, Thompson does not say that he did not move the camera, and implies that he did* [p. 226.]

Whatever Thompson used was not used until the fall of 1847—after the invention—and, if he is to be believed, the thing that he did use bore no resemblance to the Southworth Camera.

JAMES IRVING.

He testifies, at page, 229 that he made two pictures on one plate, without withdrawing the plate-holder from the box, in 1845. He produces "a model" of the apparatus used, which is marked, "Exhibit Irving, No. 1." He does not produce the camera-box used by him of which this is claimed to be a model, nor any picture taken with it, although he says (p. 230) that he took the picture of Richard Lobdell with it.

Certainly, "Exhibit Irving, No. 1," is a most unsatisfactory piece of evidence. It is in no sense *a model*, made, as it is, by alterations in a small pine box, such as is used by confectioners. A partition divides the box lengthwise, and, in front, are grooves in which a lens may be made to slide laterally. While this may illustrate the idea, it is remarkable that no better evidence of the use of such an apparatus can be offered than this rough box, which may be characterized as manufactured evidence.

Here we find the defendants endeavoring to show that a *movable lens*, used prior to the invention, will defeat the patent, although elsewhere they deny that the movable lens is equivalent to the movable plate-holder.

But Irving is prolific, and produces what he calls a model of another apparatus, used by him in 1847, and it is marked, "Irving Exhibit, No. 2." It is another pine box [p. 230].

And again, he says he was with Meade Bros. from 1848 to 1851 [p. 230], and he produces what he terms a model of another multiplying camera used by them during this time. It is marked, "Exhibit Irving, No. 3" [pp. 231–2].

Not one of the three original devices, claimed to have been used by him, is produced.

The "models" are gotten up for the purposes of the case.

This man knew about the case of Wing vs. Schoonmaker, but did not testify in that case against the patent, *because he was not then on friendly terms with Schoonmaker*" (p. 231).

What consideration changed his feelings?

A witness who withholds material testimony, until his unfriendly feelings are compensated, ought to be despised, and his testimony should be regarded with suspicion.

He was with Meade Bros. from 1848 till 1851 [p. 230]. We have already shown that no device was used by them for taking two pictures on a plate which did not involve a movement of the camera, and consequent distortion.

How happens it that neither this witness, nor any other of the defendants' witnesses, can produce a single original apparatus by which more than one picture could be taken on a plate without moving the camera?

We call especial attention to the cross-examination of Irving, and claim that his evidence is utterly incredible.

In rebuttal, it is shown by expert testimony and practical experiment, that, with the so-called models and lenses of the size they indicate, it is impossible to produce such pictures as are said to have been made, and impossible to produce a single picture of the human face [pp. 113 to 118].

Nicholas Pike was frequently in the gallery of Meade Bros., from 1842 or 1843 until they left Albany for New York, and it clearly appears that they never had or used any of the devices which Irving describes, but that their only mode of taking two pictures on a plate necessitated moving the camera [pp. 126–7.]

VAN BUNSCHOTEN'S PATENT.

This was granted after the date of Southworth's invention, for a device which was totally different.

It is for taking pictures in parts or sections, and for matching the parts. Southworth took complete pictures. It was an unwieldy, cumbersome affair even for the purpose it was intended for, and probably none were ever sold or used. It was not practicable to use it to accomplish the purpose of Southworth's apparatus [p. 76.]

WILLIAM A. PRATT AND FAMILY.

William A. Pratt claims that he used a sliding plate-holder in Virginia—he thinks in 1845; and says, "I "know in 1846" [p. 166, *et seq*].

Of course, it is destroyed!

The defendants, however, made a model for him to testify from, and we admit that they succeeded in producing a plate-holder which embodies the substantial features of Southworth's invention. It was to be expected that they would. [See Defts. "Exhibit No. 9."]

He produces a *fac simile* of four pictures on a plate, which, he says, were taken with a sliding plate-holder March 6th, 1847. It is a picture of his son, taken, he says, at the age of four years. [See Defts. "Exhibit Nos. 10 and 11."]

He claims to have used this in Alexandria and elsewhere in 1845, and in Richmond in December, 1846, and onwards, and he says that he "gave it freely to the pro-"fession" [p. 169].

This statement is simply preposterous.

He cannot tell who made the first plate-holder for him, or who made any of the others, or how many others he had. "They were made in all sorts of places, and at "all sorts of times," and he cannot give a more definite answer [p. 170]. He says that the plate was parallel with the axial line of the lens, and reiterates it [p. 168]. This was not through inadvertence, but from downright ignorance, such as no one would display who knew enough to originate the apparatus he pretends to have invented.

"Mr. Pratt was generally looked upon as a sharp, "shrewd and tricky sort of a man" [p. 141].

Pratt's testimony was used in the Dunshee case before Judge Shepley, but was not credited [Complainants' "Exhibit 26"].

Eveleen Pratt, the wife of William, was called by the defendants to corroborate her husband, but the only effect which her testimony can be said to have is the reverse of what was intended.

She was thoroughly instructed beforehand just what to testify, and was provided with a paste-board model, marked so that she need not go astray ("Defendants' Exhibit, Eveleen Pratt"), and a memorandum of dates, which she was discovered referring to while testifying (page 298, and "Exhibit Eveleen Pratt, No. 2"), and her testimony had been written out for her beforehand by J. H. Tompkins, and this she also held in her hand while testifying.

After this trick was discovered, and she was required to answer without the aid of these directions, her testimony is conspicuous for absence of all recollection.

We are justified in charging that the testimony of each one of the Pratts, so far as it is material, was prepared for them, and is false.

The boy, whose picture is produced, testifies at page 302. He was thirty-three when he testified, and identifies "Exhibits 10 and 11" as copies of the picture of himself, taken when he was four years old—twenty-nine years before! Another instance of retentive memory.

We refrain from discussing in detail in this brief the testimony of these witnesses.

It should receive, however, the most careful scrutiny.

Standing by itself, and without considering the vast amount of testimony which has been taken in rebuttal, the evidence of the Pratts is not sufficient to defeat a meritorious invention.

Something stronger than lost machines, tricky witnesses, manufactured evidence, and models prepared by defendants pending suit, should be required for such a purpose.

We therefore indicate briefly the points which the complainants claim, show conclusively that the pictures of the Pratt boy were not taken with the sliding plate-holder.

Long before Southworth's invention, several pictures were taken on the same plate without removing it from the camera by tipping and swinging the camera. But the pictures so taken were distorted and dissimilar [pages 55, 56, 59, 146 and 74].

It is believed that the pictures of the Pratt boy were taken by this old and well known method.

In support of this claim, the testimony of Southworth and Wing, James W. Black, Alvan Clark, Nicholas Pike, Chandler Seaver, and Edward F. Smith has been taken, and if the Pratt testimony should be deemed worthy of consideration, the testimony of these witnesses should be examined.

In brief, the reasons which are given by these witnesses for their conclusion that the Pratt boy picture was taken by tipping and swinging the camera, are as follows:

I. Suppose a picture should be taken in the best part of the field of the lens (as is done with Southworth's plate-holder), the centre of the picture being in the axial focus of the lens—just as Pratt says each of the pictures of his boy was taken; the shading off, or penumbra, would be substantially the same, at the same distances from the centre, irrespective of the direction from the centre, as is seen in the central figure on Exhibit No. 23, and in Exhibit 22[1].

If the pictures of the Pratt boy had been taken severally, as testified by Pratt, the centre of each of the pictures would have been taken in the axial focus of the lens; and the shading off, or penumbra, in the four pictures would be substantially the same, at equal distances from the centre of each picture, as will be seen in any picture taken with the Southworth apparatus. See, for example, the several pictures on Exhibit No. 29.

On inspection of the pictures of the Pratt boy, as shown in any of the exhibits, it will be seen that this is not so. The shading off from the centre of each of these pictures is not the same as in any one of the others; but it is evident, on inspection, as stated by Black and by other witnesses, that, when *all* these pictures were taken, the part near where the four corners come together in the centre of the exhibits would correspond to the optical axis of the lens.

II. In multiplying pictures, according to the Southworth patent, the outlines of the object, as a whole, and also in detail, as to projecting portions, must be the same in each of them.

If the pictures of the Pratt boy cannot stand this test, they could not have been taken in the manner Pratt states.

An examination of any exhibit showing the pictures of the Pratt boy will sustain the plaintiffs' position in this respect.

Among other things, the chair arm No. 2, as to its edges, shape, and carving, is in very striking contrast with the same in each of the other pictures. And the chair arm would not be moved, even if there were a slight movement of the boy. Note also the prominence of the left arm in the same picture, and the spot of light over the chair and under the arm, as compared with corresponding parts of the other pictures. These and other similar differences show that the four pictures could not have been taken as claimed by the defendants.

III. In multiplying pictures by the Southworth patent, the spherical aberration in all of the pictures must be the same. It is not so in the Pratt pictures.

IV. The fourth is the stereoscopic test. If two pictures, taken from the same point of view, as pictures are always taken by the Southworth patent, and as Pratt states the pictures of his boy were taken, were placed in a stereoscope, *no relief would be shown; but they would appear to a person looking at them as one picture upon a flat or plain surface.* But, if the pictures were taken, *not* as Pratt says, but as claimed by defendants, they would present in the stereoscope a picture showing relief—prominent parts of the object standing out; and the pictures of the Pratt boy do show such relief.

V. In the Pratt exhibits the apparent size of the orifice of the diaphragm through which the light is admitted upon the plate, is not the same for all of the four pictures, as would be the case if they had been taken as Pratt states.

VI. The same fact is proved by the uneven and different edges of the outline of the diaphragm, and corners and cutting out of different openings for the two on the right and the two on the left. These differences are apparent, and may be demonstrated by superposing the right and left openings of the "Pratt Boy Exhibit" edge to edge.

VII. Any set of identical geometrical lines and angles, drawn upon the same foundation line, extending over the surface of each of the four pictures of the Pratt boy, when the pictures are superposed, will not coincide with the lines and angles upon corresponding points in the different pictures, except in part; whereas, if the pictures were taken as Pratt states, they would coincide throughout ("Exhibit No. 34").

VIII. If four pictures were taken on the same plate, with the Southworth device, they might be bisected in any direction, and the different parts being interchanged at pleasure, perfect pictures would be made. But the pictures of the Pratt boy, on being bisected, cannot be thus united; showing they could not have been taken as stated by Pratt ("Exhibits Nos. 31 and 32").

The Decree of the Circuit Court should be reversed, and the cause remanded.

ALBERT A. ABBOTT,

Of Counsel for Appellants.

OFFICE SUPREME COURT U.S.
FILED
OCT 31 1882
JAMES H. McKENNEY, Clerk.

16-142

Supreme Court of the United States.

No. 67.

SIMON WING, MARCUS ORMSBEE AND ALBERT S. SOUTHWORTH,

Appellants,

VS.

E. ANTHONY, HENRY T. ANTHONY AND VINCENT H. WILCOX,

Appellees.

BRIEF FOR APPELLEES.

EDMUND WETMORE, Of Counsel for Appellees.

Supreme Court of the United States.

SIMON WING, MARCUS ORMSBEE AND ALBERT S. SOUTHWORTH,
Complainants and Appellants,

vs.

E. ANTHONY, HENRY T. ANTHONY AND VINCENT H. WILCOX,
Defendants and Appellees.

Brief for Appellees.

This suit was brought upon Reissued Letters Patent No. 1,049, dated September 25, 1860, granted Albert S. Southworth for a "Plate-holder for Cameras."

Rec., p. 17.

The court below dismissed the bill, on the ground that the reissue must be limited to the specific device claimed in the original Letters Patent, and that, so limited, the defendants did not infringe.

This dismissal was no error,

(*a.*) for the reason given in the opinion of the court below; and also

(*b.*) because of the invalidity of the reissue.

(*c.*) because of the anticipation of the invention claimed in the reissued Letters Patent, under any construction of them, which would make the defendants infringe.

First.

The reissue is void, because its natural and proper construction, and the one most in accordance with the rules for the legal interpretation of written instruments, shows it to be for a different invention from the original.

The original patent is entitled a patent for "Plate-Holder for Cameras."

Rec., p. 14.

The inventor states in the specification that he has "invented a new and useful plate-holder for cameras, for taking photographic impressions."

Rec., p. 15.

He states the object of the invention as follows:

> "In taking daguerreotypes of small size for lockets, "it often occurs that the first picture taken is not "properly timed or exposed to the light, and a "second or a third is required to be taken before a "perfect picture is obtained, each picture thus taken "requires a freshly prepared plate, which causes a "considerable consumption of time.

> "The object of my invention is to bring in rapid "succession different parts of the same plate, or "different plates, of whatsoever material, prepared "for photographic purposes, into the centre of the "field of the lens, for the purpose, of either timing "them differently, that the most perfect may be "selected, or, of taking different views of the same "object with the least delay possible, or, of taking "stereoscopic pictures upon the same or different "plates, with one camera."
>
> Rec., p. 15.

He then states in what the invention *consists*, as follows:

> "My invention *consists* of a peculiarly arranged "frame, in which the plate-holder is permitted to "slide, by which means I am enabled to take four "daguerreotypes upon one plate and at one sitting, "different portions of the plate being brought successively opposite an opening in the frame, the "opening remaining stationary in the axis of the "camera while the plate-holder and plate are "moved."
>
> Rec., p. 16.

The specification then particularly describes the structure and operation of the combined frame and plate-holder.

The device consists essentially of a rectangular frame (*A*, *B*), to the back of which is hinged a back plate or cover (*F*), and over the front of which is a plate or shield, having a hole (*C*) in or near its centre, through which the rays from the lens pass when a picture is taken.

The sensitized plate is held in another and much smaller rectangular frame or plate-holder (*G*), which, being placed in the recess formed by the back of the front plate and the surrounding edges of the large frame, can be freely moved about therein, so as to successively expose different parts of the sensitized plate through the hole *C*.

When the plate-holder *G* is moved into different positions and retained therein for the purpose of successively exposing different portions of the surface of the sensitized plate, it is guided and held by the following device:

> to the ordinary back plate, which holds the sensitized plate in the plate-holder *G*, is fastened a block (*I*), which extends through a rectangular opening in the hinged back plate or cover *F* of the large frame;
>
> to the lower edge of this rectangular opening is hinged a rectangular lid or guide piece (*L*);
>
> when this guiding lid is closed, it only covers the lower portion of the rectangular opening through which the block (*I*) projects, so that the block can rest and be slid along upon the upper edge of the lid, and when the lid is opened back, the block (*I*) falls into a channel in its lower inner surface, parallel with its upper edge, upon which the said block (*I*) can rest and slide, as it does upon the upper edge. The lid or guide piece (*L*) has also a projection on its inner surface intended to guide the block (*I*) when it falls from the upper edge to the channel below.

By these means, if the plate holder *G* be placed within the large frame, and the back plate or cover *F* of the large frame shut over it, by moving the block *I*, (which will then project through the rectangular opening in *F*) successively into the four corners of the said opening, the four quarters of the surface of the sensitized plate, will be successively exposed through the hole *C*, and thus four successive pictures will be taken on the same plate. The lid or guide-piece *L* will guide the block *I* in sliding it into the corners of the opening, and hold it in place in each corner.

See model of the contrivance, Complt's. Ex. 16,
Rec., p. 29, Int. 27.

The specification then proceeds as follows:

"It is evident that, as the frame *A*, *B* remains stationary, "the opening *C*, when once placed in the axis of the camera, "will not change, and the successive pictures will all be "taken with equal correctness; and the changes are so "quickly made that the aperture of the camera need not be

" covered from first to last, unless different positions or dif-
" ferent objects are taken."

" The guide piece *L*, or some equivalent thereof, is *abso-*
" *lutely essential*, as the attempt to hold the block *I* by hand
" would shake the camera or move it from its normal posi-
" tion whilst the picture was being taken.

" Heretofore I have spoken of the above contrivance as
" calculated to take four pictures upon the same plate; it is
" evident, however, that it may be so arranged as to take
" any desired number, as six or eight, for example, without
" departing from the principle of my invention."

Rec., p. 16.

The claim is in the following words:

" The within described *plate-holder*, in *combination* with the
" *frame in which it moves*, constructed and operating in the
" manner, and for the purpose, substantially as herein set
" forth."

Rec., pp. 16, 17.

In the reissue, which is five years later than the original, the attempt is made to transform the foregoing patent for a mechanical structure into a patent for a process of taking a number of pictures upon the same plate, by successively exposing different portions of the plate to the lens, irrespective of the mechanical means used to effect this object.

Instead of stating the invention, as in the original, to be " a new and useful *plate-holder* for cameras, for taking photo- " graphic impressions," it is stated to be " certain *im-* " *provements* in taking photographic impressions." The gist of the invention is described as consisting in bringing successively different portions of the same plate into the field of the lens of the camera, and the mechanical devices mentioned in the original are described as only one means employed by the inventor in carrying out his invention, there being interpolated into the reissue the statement that other means may be employed, namely, that the invention " may " be embodied by causing the lens of the camera to be made " adjustable in different positions, with respect to the plate, " while the plate remains stationary," and also, that when the contrivance is arranged to take more than four pictures the inventor " uses suitable *grooves, stops* or *indices* by which " the operator adjusts the positions of the plate substantially " on the same principle that he uses the corners of the " opening *K*."

The claim is " bringing the different portions of the single " plate, or several smaller plates successively into the field " of the lens of the camera, in the manner and for the pur- " pose specified."

The changes between the original patent and the reissue will be readily seen from the following: The left hand column is the specification of the original patent *verbatim*, and the right hand colnmn is that of the reissue *verbatim*. In each, the parts which are not found in the other, are in italics.

ORIGINAL.	REISSUE.
Be it known that I, Albert S. Southworth, of Boston, in the County of Suffolk, and State of Massachusetts, have invented *a new and useful plate-holder for cameras for* taking photographic impressions, of which the following is a full, clear and exact description, reference being had to the *annexed* drawings, in which	Be it known that I, Albert S. Southworth, of Boston, in the County of Suffolk, and State of Massachusetts, have invented *certain improvements in* taking photographic impressions, of which the following is a full, clear and exact description, reference being had to the *accompanying* drawings, *making part of this specification*, in which
Fig. 1 is a front view.	Fig. 1 is a front view *of the apparatus which I employ in carrying out my invention.*
Fig. 2 a rear view.	Fig. 2 a rear view.
Fig. 3 a similar view, the cover being dropped into a horizontal position.	Fig. 3 a similar view, the cover being dropped into a horizontal position.
Fig. 4 a vertical section through the center.	Fig. 4 a vertical section through the center.
Fig. 5 an end view.	Fig. 5 an end view.
Fig. 6 details which will be referred to hereafter.	Fig. 6 details which will be referred to hereafter.
Fig. 7 the slider.	Fig. 7 the slider.
In taking daguerreotypes *of small size, for lockets, it often occurs that the first picture taken is not properly timed, or exposed to the light, and a second or a third*	In taking daguerreotypes*, photographs, etc., it has been customary to use a separate plate for each impression, the plate being removed from the camera and re-*

is required to be taken before a perfect picture is obtained; each picture thus taken requires a freshly prepared plate, which causes considerable consumption of time. The object of my invention *is to bring*, in *rapid succession*, different *parts* of the same plate, or *different* plates, *of whatsoever material, prepared for photographic purposes*, into the *center of the* field of the lens, *for the purpose of either timing them differently, that the most perfect may be selected, or of taking different views of the same object with the least delay possible, or of taking stereoscopic pictures upon the same or different plates with one camera..*

My invention *consists* of a peculiarly arranged frame, in which the plate-holder is permitted to slide, *by which means I am enabled to take four daguerreotypes upon one plate and at one sitting, different portions of the plate being brought successively opposite an opening in the frame, the opening remaining stationary in the axis of the camera, while the plate holder and plate are moved.*

The frame which guides the motion of the plate-holder is constructed as follows: A is the front plate, immediately in the rear of which is a zinc plate B. In the centre of this plate is the hole C (seen in blue in Fig. 2), which is closed by the zinc slider D (Fig. 7) in the customary manner. Around the borders of this frame are the strips E, seen in section in Fig. 4 and in dotted lines in Fig. 1. The rear plate F of this plate is hinged to one of the strips E at b. Between this plate and the zinc plate B, and within the space enclosed by the strips E, slides the plate-holder, which is constructed as follows: G is the frame of the plate-holder, into the rectangular opening of which is inserted the daguerreotype plate seen in red in Figs. 2 and 4 and in dotted lines in Fig. 1. The back plate H rests against the daguerreotype plate and holds it in place. The plate-holder thus con-

placed by another; where several impressions of the same object were to be taken, as in multiplying copies, or for the purpose of selecting the "best timed" picture, this caused considerable delay and trouble; to obviate which is the object of my *present* invention, *which consists* in *bringing successively* different *portions* of the same plate, or *several smaller* plates, *secured in one plate-holder*, into the field of the lens *of the camera.*

In carrying out my invention *I have made use* of a peculiarly arranged frame, in which the plate-holder is permitted to slide, *and in which the position of the plate-holder is definitely indicated to the operator, so that he can quickly and accurately adjust the plate or plates; the accompanying drawings and description so explaining the same that others skilled in the art may understand and use my invention.*

The frame which guides the motion of the plate holder is constructed as follows: A is the front plate, immediately in the rear of which is a zinc plate B. In the centre of this plate is the hole C (seen in blue in Fig. 2), which is closed by the zinc slider D (Fig. 7) in the customary manner. Around the borders of this frame are the strips E, seen in section in Fig. 4 and in dotted lines in Fig. 1. The rear plate F of this plate is hinged to one of the strips E at b. Between this plate and the zinc plate B, and within the space enclosed by the strips E, slides the plate holder, which is constructed as follows: G is the frame of the plate holder, into the rectangular opening of which is inserted the daguerreotype plate seen in red in Figs. 2 and 4 and in dotted lines in Fig. 1. The back plate H rests against the daguerreotype plate and holds it in place. The plate-holder thus con-

structed is allowed to take four different positions within its carrying frame, so as to bring the four different portions, 1, 2, 3 and 4, Fig. 2 of the plate, successively opposite to the opening C. It is guided in its motions in the following manner: I is a block attached to the back plate of the plate-holder, which projects through a rectangular opening K in the hinged plate F. The block I is moved in succession into the four different corners of the opening K, by which means the four different portions of the daguerreotype plate are brought opposite to the opening C. The motions of the block I are regulated by the guide L hinged to the plate F at d. When this block is in the position seen in Fig. 2 the block I rests upon its top edge, and one corner of the daguerreotype plate (3) is opposite to the hole C, when the block I is slidden to the opposite corner of the opening K, still resting upon the piece L, another portion (4) of the daguerreotype plate is brought opposite the opening C. The guide piece L is then thrown back, as seen in Fig. 4, and the block I is allowed to drop into the right-hand lower corner of the opening K, the block I, as it descends, being guided by the edge a, and the portion (1) of the daguerreotype plate is brought opposite the opening C.

By another movement the block I is thrown into the left-hand corner of the opening K, the block I sliding in the channel c, when the portion (2) of the daguerreotype plate is exposed to the opening C. I am thus enabled to take four impressions upon different portions of the same plate. These may be miniatures of the same person taken, as before stated, for the purpose of selecting the best for a locket; or they may be different views of the same face taken upon the same plate for the purpose of preserving them together, or they may be daguerreotypes of different persons, as different members of a family, or, lastly, stereoscopic pictures may be thus taken with a suitably arranged camera.

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It is evident that as the frame A B remains stationary, the opening C, when once placed in the axis of the camera, will not change, and the successive pictures will all be taken with equal correctness; and the changes are so quickly made that the aperture of the camera need not be covered from first to last, unless different positions or different objects are *taken*.

The guide piece L, or some equivalent thereof, is absolutely essential, as the attempt to hold the block I by hand would shake the camera or move it from its normal position whilst the picture was being taken. Heretofore I have spoken of the above contrivance as calculated to take four pictures upon the same plate; it is evident, however, that it may be so arranged as to take any desired number, as six or eight, for example, without departing from the principle of my invention.

Claim.

What I claim as my invention, and desire to secure by Letters Patent, is: *the within described plate-holder, in combination with the frame in which it moves, constructed and operating* in the manner and for the purpose *substantially as herein set forth.*

It is evident that as the frame A B remains stationary, the opening C, when once placed in the axis of the camera, will not change, and the successive pictures will all be taken with equal correctness; and the changes are so quickly made that the aperture of the camera need not be covered from first to last, unless different positions or different objects are *desired*.

The guide piece L, or some equivalent thereof, is absolutely essential, as the attempt to hold the block I by hand would shake the camera or move it from its normal position whilst the picture was being taken. Heretofore I have spoken of the above contrivance as calculated to take four pictures upon the same plate; it is evident, however, that it may be so arranged as to take any desired number, as six or eight, for example, without departing from the principle of my invention.

In this case, however, I use suitable grooves, stops, or indices by which the operator adjusts the positions of the plate substantially on the same principle that he uses the corners of the opening K in the above described apparatus. It is evident that my improvement may be embodied by causing the lens of the camera to be made adjustable in different positions with respect to the plate, while the plate remains stationary, so that different portions of the plate may be brought into the field of the lens. This I have tried, but do not consider it practically so good a plan as the foregoing, as it necessitates a change of position of the camera itself or of the objects.

Claim.

What I claim as my invention, and desire to secure by Letters Patent, is: *bringing the different portions of a single plate, or several smaller plates, successively into the field of the lens of the camera, substantially* in the manner and for the purpose *specified.*

This reissue is invalid for the following reasons:

1. The *intention* of the changes it contains is manifest.

It is to transform the claim of the original for a specified apparatus or machine, *viz.:* "the within described *plate-* " *holder*, in *combination* with the *frame in which it moves, con-* " *structed* and *operating* in the manner, and for the purpose " substantially as herein set forth," into a claim for a *process, viz.:* the "*bringing* the different portions of a single " plate or several smaller plates successively into the field " of the lens of the camera, substantially in the *manner* and " for the purpose specified," *i. e.*, not only by the use of the structure or machine claimed in the original, but also by other means specified in the reissue, but not shown or described in the original.

The changes in the specification either have this effect, or they have no effect whatever; and to hold that they have no effect is to construe the instrument in disregard of material parts and in violation of its manifest intention.

It was suggested in *Campbell* v. *James* (104 U. S. Rep., p. 377), where a similar transformation of a claim for an *apparatus* to a claim for a *process* was attempted, that "*perhaps*" the altered claim might be construed into a claim for the exclusive use of the apparatus; but it does not appear to have been decided that such a construction would save the reissue, and in this case the claim is not limited to the exclusive use of the apparatus described in the original.

But if the reissue be thus construed, in accordance with the obvious meaning of the alterations which distinguish it from the original specification, it is plainly for a different invention and void.

Campbell *v.* James, 104 U. S., 356.

" A patent for a machine cannot be reissued for the purpose of claiming the process of operating that class of machines; because if the claim for the process is anything more than, for the use of the particular machine patente it is for a different invention."

Heald *v.* Rice, 104 U. S., 737, 753.

1. It makes no difference whether the patentee actually invented the other means or apparatus not described in the original, or made the broader invention of the reissue or not; the rule is now settled that the reissue must be compared, not with all that the patentee may have invented prior to the time of obtaining his original patent, but with what he therein described and claimed.

Manufacturing Co. *v.* Ladd, 102 U. S., 408, 413.
Campbell *v.* James, 104 U. S., 356, 370.

2. The reissue is invalid, because it appears from a mere inspection of the patents, the original and the reissue, that the original was not "inoperative or invalid by reason of a "defective or insufficient specification, or by reason of the "patentee claiming as his own invention or discovery more "than he had a right to claim as new" (R. S., § 4916) and, therefore, the commissioner had no jurisdiction to accept the surrender and issue new letters.

The original specification is defective in no respect, but is precise and exact, in both description and claim. It secured to the patentee everything that he chose to claim. The claim is one that cannot be lawfully broadened by a reissue. Indeed, the validity of the reissue can only be sustained on the ground that all the attempted alterations from the original specification are inoperative.

The case does not differ, in effect, from that which was *supposed* by the court in *Giant Powder Co.* v. *Powder Co.* (4 Fed, Rep., 720) in the following passage from the opinion:

> "Suppose, for illustration, that the specifications in two patents, the original and the reissued, "were identical in their language, or differing in "phraseology, were identical in meaning, would it "be pretended that, though their identity would "be thus manifest on their face from a comparison of "the two, and that the commissioner in granting the "reissue had accordingly acted in a case *not warranted by the statute,* it must be assumed that the

> " reissue was properly granted, and that the action of
> " the commissioner could not, therefore, be ques-
> " tioned? The decisions support no such conclu-
> " sions."

4 Fed. Rep., 724, 725.

In this case, the reissue can only be held to be for the same invention as the original, on the theory that its specification, although "differing in phraseology" from that of the original, is "identical in meaning." Whatever may be the limitations or qualifications of the doctrine laid down in the case quoted, the present case falls directly within its terms, expressed in its narrowest form.

Here is an original specification which is not only neither defective, inoperative or invalid, but is so full, clear and precise that it is only by holding that the reissue is inoperative for the purpose of effecting any material alteration therein, that it can be held to be for the same invention.

Plainly it is a case where the Commissioner exceeded his jurisdiction.

Giant Powder Co. *v.* Powder Co., 4 Fed. Rep., 720.
Campbell *v.* James, 104 U. S.. 356-370.

Second.

If the reissue can be sustained by construing it as identical, in effect, with the original, the defendants have not infringed it.

Thus construed, the change in language between the claims of the original and the reissue must be regarded as merely formal, for if the reissue has a broader range of equivalents than the original, or is construed to cover the process of multiplying pictures on the same plate by the use of any other means than those described in the original, it is for a different invention, and, therefore, nothing can be an infringement of the reissue that would not be an infringement of the orignal, and in determining the question of infringement reference may be had to the original alone.

It was urged on behalf of the complainants, in the court below, that Southworth was the first to invent *any* means of multiplying pictures on the same plate by bringing successive portions of the plate into the centre of the field of the lens and at right angles to its axis—either by moving the plate in reference to the lens or the lens in reference to the plate, and, therefore. that his original patent must be broadly construed to cover *all* means for carrying out that process.

The answer to this position is,

First, that there is no such extensive rule of law as that referred to, or one that would embrace the present case.

The rule, which it is presumably intended to invoke, refers to patents for processes or arts where the gist of the invention consists in the discovery of some previously unknown law of matter, or new principle of operation, and the means by which the discovery is applied, is merely a subordinate part of such invention.

In the present case there was no discovery at the bottom of Southworth's invention. He was not the inventor of an art or process. At the time of his invention it was universally known that to get the best effect in taking one or several pictures on the same plate, the plate should be brought into the center of the field of the lens. The only field of invention open was in the mechanical means by which this might be accomplished, and such an invention is, as it could only lawfully have been, the subject of South worth's original patent.

The rule the complainants invoke has no application to this case.

O'Reilly *v.* Morse, 15 How., 62.
Tilghman *v.* Proctor, 102 U. S., 707-727.

Second.—Even if the original patent might have been lawfully issued to cover so broad an invention, it cannot be construed to have that effect without violence to the language of its claim. If the patentee made such an invention, he omitted to describe or claim it, and he must be held to what he chose to claim.

R. R. Co. *v.* Mellon, 104 U. S., 112.
Burns *v.* Meyer, 100 U. S., 671.

Third.—It is untrue, in point of fact, that Southworth was the first to invent any means to carry out the process of multiplying pictures on the same plate by bringing successive portions of the plate into the centre of the field of the lens.

Different means of carrying out that process, and some of them almost identical with those described in the patent, had been known and used in this country prior to Southworth's invention, notably by the daguerreotypist Pratt, in Virginia (Rec., p. 166), and also by others, in instances to be hereinafter discussed.

Infringement must, therefore, be determined by comparison of the structures claimed to infringe, with that described in the original patent.

I.—The complainants introduced no evidence that the alleged infringing structures are the same as the particular structure claimed in the original, and described in the same terms in both the original and the reissue.

The alleged infringing structures consist of two cameras and their attachments, Defendants' Exhibits 3 and 4, Exhibit 3 being the smaller of the two.

Rec., p. 14.

In addition to the instruments themselves, the complainants introduced a cut of them, and accompanying description, taken from the defendants' advertising publication; and their manufacture, sale and general manner of use, were admitted by stipulation.

Rec., pp. 20, 21.

In respect to these exhibits the complainant, Wing, testifies as follows:

" Int. 14. Please examine Exhibit No. 3, in this case, and
" state how its construction and practical working compare
" with the said patented article?

" (Objected to as immaterial and incompetent.)

" A. It is the same.

" Int. 15. Please examine Exhibit No. 4, in this case, and
" state whether it contains the patented invention as de-
" scribed in said patent, and the extension thereof?

" A. I have examined it, and it does.

" Int. 16. Please examine Exhibit No. 5, in this case, being
" page 158 and first two-thirds of 159 in Anthony's Photo-
" graphic *Bulletin* for May, 1873, and state whether the Fig-
" ures 1 and 2 on page 158, and the description in the first
" two-thirds of p. 159, exhibit and describe the aforesaid
" patented invention?

" A. I have read those descriptions and seen the drawings
" or figures, and consider them a good description of the
" camera made under the Southworth patent."

Rec., p. 23.

* * * * * * * *

" Cross-Q. 1. What do you understand to be the inven-
" tion secured by the reissued Southworth patent?

" A. The making of several pictures successively in the
" best part of the field of the lens in the camera box."

Rec., p. 23.

* * * * * * * *

" Cross-Q. 6. Do I understand you then to mean that the
" Southworth patent covers producing on the same plate
" successive images of the object, by whatever means or
" apparatus this is accomplished?

" A. All that are produced behind the middle of the field
of the lens successively on the same plate."

Rec., p. 24.

* * * * * * * *

" Cross-Q. 13. Would a sliding-frame, having a horizontal
" movement only, so adjusted as to make successive images
" on the same plate through the centre of the lens, be an in
" fringement of the Sonthworh reissue?

"the description of the figures in the print is a very proper "and correct one, and describes a movement of the camera "very like the patent No. 1, and is an infringement of it."
Rec., p. 29.

These were the only witnesses examined by the complainant on the subject of infringement.

Their testimony goes only to the effect that they think the defendants' cameras contain the patented invention, on their understanding that the patent covers the process of multiplying pictures on the same plate, by imparting to the plate, by any means, a motion that brings its parts successively into the "best part of the field of the lens."

They do not say or pretend that the defendants' cameras contain the "peculiarly arranged frame" or the combination of "plate-holder" with said "frame" described as the essential characteristics of the Southworth device. They do not, as they cannot, say that the defendants' cameras contain the same essential parts, or their equivalents, operating in the same manner as those of the structure described in the patent. They say, it is true, that they find the equivalent of the peculiar guide piece *L* of the patent in the two dissimilar devices, one a side catch, and the other a pivoted button, which serve respectively to support the vertically moving parts in the two forms of the defendants' apparatus; but this supposition, as clearly appears, rests on the same understanding of the patent, viz.: that it is a patent for a process or art, and that any means for giving the plate the required motions, and retaining it in the required positions with respect to the lens, are the equivalents of the means described in the patent.

There is no attempt on the part of the complainants to prove that the defendants infringe if the reissue be limited to the mere mechanical combination for which the original patent was issued.

II.—That the defendants' cameras do not contain the patented device is evident on mere inspection of the apparatus.

Some of the most obvious of the material differences between the patented and the defendants' devices are the following:

1. The Southworth structure is stated to consist,

First, in a "*peculiarly arranged frame* in which the plate-holder is permitted to slide," which said "frame which guides the motion of the plate-holder is constructed as follows:"

Rec., p. 15).

The peculiarities of construction, which are then described, are briefly these:

(*a.*) The frame has over its front a permanently fixed front plate, with an opening through which the rays from the lens fall.

(*b.*) It has a hinged back plate or cover, having a rectangular opening in its centre, to the lower edge of which is hinged an ingenious and peculiar "guide piece *L*," which "guide piece *L*, or some equivalent thereof," is stated in the specification to be "absolutely essential."

Rec., p. 16.

2. The *second* element of the Southworth structure is a plate holder or smaller frame for carrying the sensitized plate, the essential peculiarities of which are: *first*, that it is much smaller than the larger frame, so that it can slide about within it, with considerable range of motion; and, *second*, it has projecting from its back plate a block, intended to project through the opening in the hinged cover of the larger frame.

P. 16.

These two elements are combined in the following manner: The smaller frame or plate-holder is placed within the larger frame, with the plate facing towards the lens, and the hinged cover of the larger frame being closed, the block on the back plate of the plate-holder projects through the opening in said hinged cover. By moving the said block successively into the four corners of the opening, guiding and sustaining it by the guide piece *L*, different parts of the plate are successively exposed to the lens through the opening in the front plate of the larger frame, and the successive pictures taken; and the claim of the original for this structure or apparatus is "the within described plate-" holder, in combination with the frame in which it moves, "constructed and operating in the manner," &c., described.

Rec., pp. 16–17.

The defendants' cameras have neither the elements of this combination nor its mode of operation.

First.—They have not the "peculiarly arranged frame." Their frame, which contains the plate-holder, and corresponds to the large frame of the patent, has not the front plate with the opening through which the rays from the lens fall, nor any front plate; nor has it any opening in its hinged-back cover, or the "absolutely essential" guide piece *L*, or any substitute therefor, of any description. It is substantially the same as the frame of the patent, without any of the peculiarities essential to the latter.

Second.—The defendants' plate-holder does not, and cannot, slide about within the large frame, but when placed in position, rests centrally and immovably within it, and has no block extending from its back plate, and nothing in any manner corresponding thereto.

Third.—The defendants' structure is not only different in its elements, from the patented structure, but different in its mode of operation.

In the Southworth device the plate is brought into position by sliding the plate holder around within the large frame until it is pushed up into a corner, and there imperfectly held by the guide lid or piece *L*; in the defendants' apparatus the plate holder has no independent motion within the large frame.

The large frame itself is mounted in a carriage. This carriage runs in parallel horizontal grooves, and is capable of very exact horizontal motion, which is controlled by adjustable stops. When the carriage is moved, it carries with it the frame, and the frame carries the plate holder, and thus controllable horizontal motion may be imparted to the plate. For vertical motion, the frame in which the carriage moves, is fitted into grooves in a front upright or frame fixed to the camera, and as the carriage frame may be moved up and down in these grooves, it carries with it the carriage and frame holding the plate holder, and thus imparts, finally, a vertical motion to the plate itself. By means of a stop the vertical motion can be adjusted. (See Defts.' Cameras, Complt.'s Exhibits 3 and 4.)

For the purpose of shielding the portions of the plate not in the field of exposure, the defendants use a removable diaphragm of thin board (Complt.'s Ex. 5, Rec., p. 20).

These contrivances are essentially dissimilar. In Southworth's the frame is stationary, and the plate holder moves; in the defendants' the frame moves, and carries the plate-holder with it. In Southworth's the motion is imparted to the plate holder by sliding it about over a confining surface; in the defendants' the motion is imparted by mounting the frame on a carriage that runs in grooves. In Southworth's the plate-holder is moved through its back plate, to which the block *I* is attached as a sort of handle for that purpose, and the back plate moves the frame which surrounds it, and so, the plate; in the defendants' the plate-holder, without separate motion of its own, is carried by the motion of the larger frame.

These differences in mode of operation are attended by differences in result. The Southworth sliding plate-holder is capable of motion in all directions; the parts which carry the defendants' plate-holder are capable of motion in but two directions—horizontal and vertical. The Southworth plate-holder is pushed into position by the rude contrivance of shoving it along by a projection from the middle of its back plate; the moving parts of the defendants' apparatus move in grooves with mathematical precision. The consequence of these differences is, that in the Southworth device there is great liability of de-ranging the position of the plate in the attempt to shove it into the corners it is successively to occupy, and there maintain it; in the defendants' device all liability of such derangement is removed. The Southworth device *L*, while ingenuous in theory, is, obviously, awkward and defective in practice. It may serve to hold the block *I*, in the two upper corners, but the block will invariably clog and fail to fall properly into the lower position, when the guide *L* is opened. The defendants' device avoids all such difficulty, because it has no guide *L*, and no block projecting from its plate holder to be guided.

The allegation that the stops or supports that hold up the carriage in the defendants' structure are the equivalents of the guide piece *L*, is without foundation. They are wholly different in their mode of operation; they are different in function, not performing the part of guides at all, whereas, the primary function of *L* is to guide (Rec., p. 16) and the defendants' devices have absolutely nothing in common with *L*, except that, in an entirely different way, they serve to hold up the whole moving parts of the apparatus, plate-holder included, while *L* serves directly to support the plate-holder, at least, in its highest positions; in its lowest positions, the plate-holder seems to be supported by the lower edge of the rectangular opening *K*, in the hinged cover, or back plate *F*, of the frame.

The result of this comparison is that the defendants' cameras do not contain the mechanical combination and device of the Southworth patent.

It may be urged that the complainants, Wing and Southworth, testified that the defendants' structures were an infringement, and no one testified to the contrary, and, therefore, that infringement is proved.

This conclusion is refuted by the following considerations:

1. The witnesses named, as already noted, only so testified in view of their understanding that the reissue was not

limited to the specific device of the original patent, but covered the broad device of giving the plate a vertical and horizontal motion with respect to the lens, by any means.

If the reissue is limited to the specific mechanism described in the original then there is no proof of infringement.

2. The learned Judge of the court below, from this testimony, and from inspection of the instruments, found that, limiting the reissue to the particular mechanical means for producing the desired result first described in the original, the defendants did not infringe, but used "means substantially different from those described."

It cannot be said that this finding of the court below was based upon incompetent or insufficient evidence. The rule is that the best evidence of the identity or dissimilarity of two machines consists of an inspection of the machines themselves.

This inspection may be aided by expert evidenee, or it may be of itself sufficient without such additional evidence. Where, as in the present case, the machines are not complicated, and expert mechanical skill is not required to understand the operation of their parts, it is not error for the court to determine the question by inspection alone. This precise point was so held in a late case in the Northern District of Ohio.

Everett vs. *Thatcher*, 16 O. G., 1046.

" Sufficient proof of infringement may be derived from " the comparison of that which is used by the defending " party with the descripion of the invention given in the " specification of the patent which constitutes the founda- " tion of the suit, and where the invention is embodied in a " machine or apparatus, that mode of conducting the ex- " amination is usually the most satisfactory."

Imhauser *vs.* Buerk, 101, U. S., 647, 662.

The evidence falls under the head of "Evidence addressed to the senses," which is always held to be "of the first degree and most satisfactory."

Taylor on Evid., § 498, p. 513.

So, too, in a plain case, the court may always construe a specification without the aid of expert evidence.

Heald vs. *Rice*, 104 U. S., 737, 749.

"It would be wholly superfluous to examine experts to "teach the court what they could clearly perceive without "such information, that the necessity for coned wheels to "avoid friction on curves, was a consequence of the fact "that the wheels were fixed to the axles."

Winans *vs.* N. Y. and E. R. R., 21 How., 88, 101.

Bischoff *vs.* Wethered, 9 Wallace, 812, 814.

Third.

The patentee was not the first to invent the broad device of multiplying pictures on the same plate by successively exposing different portions of the plate to the centre of the field of the lens, by moving either the plate or lens. All that he could claim was the precise mechanical device described in the original patent. Prior structures existed, much more nearly like the patented device, than the defendants, and almost identical with it.

The evidence as to what was done by Southworth and others, prior to his invention of the mechanical structure, which was the subject of his original patent, shows the following state of facts:

1. Southworth states that there was made for him a camera in the fall of 1846, received by him November 25th of that year, and this camera is in evidence, complainant's Exhibit 6. The exhibit shows an incomplete camera, without the lens, having grooved wings. By this means Southworth states two plates might have been used by shoving them

successively into the field of the lens, along the groove, and he states: "more plates than two might have been used; a "single frame with several plates in it might have been used; "a single plate might have had several pictures taken upon it "in one frame. The design was to have one frame and one "plate, and so arranged as to have several pictures taken "upon it?"

Rec., p. 26.

On *cross-examination* the witness states as follows:

"Cross-Q. 1. Was Exhibit 6 ever furnished with a slide "or frame to carry a plate to make successive pictures on "the same plate?

"A. It was not, to my recollection.

"Cross-Q. 2. When did you first make a camera like Ex-"hibit No. 6, furnished with a frame to carry a plate to "make successive pictures on the same plate?

"A. I think I used the sliding motion in a camera of that "description about 1852, but do not recollect it was adapted "to this camera at all; still it might have been."

Rec., p. 30.

The substance of the foregoing testimony is that the witness had made for him a camera box which, *if* provided with a suitable frame, might have carried a single plate across the field of the lens. The fact that it was *not* so fitted and used, is a conclusive answer to the unsupported statement of the witness, that such was its original design.

It was evidently intended, not for the use of a single plate, but for the use of "two or more plates." Whether it was ever used in this manner or not, it is clear it was not used to bring successive portions of a single plate into the field of the lens, and cannot be regarded as an embodiment of that device.

Southworth further states that between November, 1846, and April, 1847, a camera was made for him by one Stewart, who then worked for him; fragments of which camera remain, and are marked Complainant's Exhibits 7 to 11, and a model of which is marked Complainant's Exhibit No. 12.

Rec., p. 26.

This contrivance operated by moving the lens, the plate remaining stationary. Southworth states that he "used this only for experiments" (Cross-Q. 7, 14 pp. 30, 31), and that he took several pictures with it. He has no recollection of taking any pictures with it prior to the spring of 1847, though he has "no doubt it was tried "during the winter" (Q. 14, p. 27). He says he first began to use an apparatus like the exhibit, with a moving lens, in 1854 or 1855, about the time he applied for the patent in suit. He says that the apparatus of which the exhibits are fragments was a rough one, and with the exception of the slight experimental use referred to, there is no evidence it was ever used at all before it was broken up (Cross-Q. 9, 18, pp. 30, 31). Southworth further states, that he first used a camera with a single plate in it, the frame moving the plate successively into the field of the lens with a lateral motion only, about 1852—as early, he thinks, as July 1852 (Cross-Q. 2, pp. 30, 76). He first made the mechanical device for which he obtained his original patent, in 1854.

The testimony on this point is as follows:

"Cross-Q. 36. When did you first devise and make an "apparatus having the piece *L* described in your patent?

"A. I should say, in the first place, I know I made "one in 1854; whether either of my sliding movements "previously made had a stop that answers to piece *L*, I "cannot say; I know that there was one made in the "autumn of 1854; I am sure I had a frame that had a gauge "or stop to it some time previous; whether it is possible to "find that, I do not know.

"Cross-Q. 37. When did you first use in your business, "and when first sell, an apparatus like that described in "your reissued Letters Patent?

"A. I cannot say when we first began to use it, but I "judge about the time the patent was granted; not long "previously: I think there were but two or three sold be-

"fore 1859, 1860 or 1861; the exact time of the sales I can-
"not say.

"Cross-Q. 38. And when did you begin to use in your
"business a camera with a sliding lens?

"A. I should say about the same time; not varying much
"from the time the patent was granted."

Rec., p. 34.

2. On the part of the defendants it is proved that two pictures were taken on one plate by moving the lens laterally, the plate remaining stationary, as early as 1845, by James Irving, at West Troy, N. Y.

His testimony is at p. 229 of the Rec., and a rough model of the instrument used is marked Exhibit Irving No. 1.

It shows a lens mounted in a sliding frame. The box is divided by a partition lengthwise. The lens is first placed on one side of the partition, where one picture is taken upon a stationary plate at the other end of the camera, and is then moved along to the opposite side of the partition, and a second picture taken upon the other portion of the plate.

Rec., p. 229.

The complainant attempted to answer this evidence,

First, by calling one of Mr. Irving's sitters—when the apparatus like Irving No. 1 was used—Lobdell by name, to contradict Irving as to what occurred on that occasion, but the witness failed to do so.

Rec., p. 109.

Secondly, by the testimony of Wing, the complainant, to the effect that he had tried the Irving exhibits, including said rough model, Irving No. 1, and did not get successful pictures from them, and hence, that the apparatus could not have been operative.

Rec., p. 115.

The cross-examination of this witness elicited the fact that the failure of the experiment was solely due to its having been improperly performed, especially by using the wrong lens.

Rec., pp. 121, 122, 123—Cross-Q. 85, 86, *et seq.*

Testimony of this sort is, at best, of little weight. A strongly biased witness, like the complainant, Wing, nearly always makes a failure in operating apparatus, where the failure is largely contributory or essential to his own interest.

Even though such a trial should not be conducted with any intentional dishonesty, it is almost impossible that it should be conducted fairly. It is, moreover, obvious in this case that if Irving No. 1 does not show an operative method of multiplying pictures on the same plate by moving the lens, then Southworth's apparatus for doing the same thing by moving the lens, as illustrated in his model, Complainant's Exhibit 12, could not have been operative.

3. The defendants further proved that the simple device of sliding the plate before the lens, so as to take successive pictures in the best field of the lens, the plate having a lateral motion only, or a vertical motion only, was practiced in the following instances, among others:

Irving used such a device, and produces a model of one sort of camera he used for this purpose in 1847, which is like the camera with the sliding lens, except that the lens is made stationary, and the plate slides in the rear of the box.

Rec., pp. 229, 230.

He also produced another camera where this device was employed, Irving No. 3.

Rec., p. 232.

He used this device at Mead Brothers, in Albany, where he was superintendent, as early as 1848, and in his regular business as a daguerreotypist, especially for the purpose of taking small pictures for lockets and the like.

Rec., pp. 229 to 232.

Irving is strongly corroborated by Rablin (Rec., p. 243). Guyer (*id.* 256) and Hinds (*id.* 249).

Hinds and Rablin were employed at Mead's establishment when Irving was there; and Guyer, a wholly disinterested witness, was a carpenter, who made the frame for carrying the plate, which is entered in his books as "a double plate holder." This was about August, 1848.

Rec., p. 257.

Irving's testimony is full and clear, and the attempt to answer it by Wing's experiments with the apparatus has already been commented on.

The witness Hinds stated that Irving showed him the plate holder, and described its use at Mead's in 1848; that he afterwards himself used a similar method in 1849, and after that, described this method to a pupil named Sellwood.

(Rec. pp. 252, 253, 254).

Sellwood stated for the defendants that the process taught him by Hinds involved taking the plate out of the camera.

Whether this was so or not, it does not prove that what Irving did at Mead's Gallery was not precisely what he says. The further circumstance, that a boy about Mead's place, like witness Hallenbeck, may not have seen Irving practice the process, is too slight to overcome the direct and explicit evidence of Irving himself.

The same device, namely, sliding the plate before the lens, either in a vertical direction only, or a lateral direction only, was practiced by Dewey in 1852, by McKown in 1852 and 1853, and by Sinsabaugh in the fall of 1846, and by Dunshee in 1846 and 1849.

Rec. pp. 164. 204, 160, 183.

The defendants also proved that William A. Pratt, during or before the year 1846, at Alexandria, Va., and subsequently at Richmond, Va., until the year 1856, used a sliding plate holder for multiplying pictures on the same plate, nearly identical with Southworth's; having the same motion in every direction, guided and partly held in place by deep flanges on the frame, but without the hinged guide piece *L*.

Rec., p. 166.

The operation of the structure is seen from the model produced by Pratt.

Defendants' Exhibit No. 9, Rec., p. 167.

The original plate holder was burned in the fire at Richmond during the war.

Rec., p. 169.

Two original daguerreotypes taken by the use of this plate have been preserved, and are proved by Mr. Pratt: one of his mother, and one of his son. Each daguerreotype having four small likenesses on one plate.

The original daguerreotype of his son having been filed in court in another suit, and the daguerreotype of his mother being in Virginia, photographic copies were substituted for the originals in this suit. There is no dispute as to the existence of the originals.

Deft. Ex. No. 10, Rec., p. 168.
Testimony Tompkins, *id.*, p. 173.
Deft. Ex. No. 11, *id.*, p. 174.
Complt. Ex. No. 21, Rec., p. 54, Int. 30, 31.

The date of the picture of the son is fixed by the mark of the date on its back, and the fact that it was taken on the child's fourth birthday, March, 1847.

Rec., pp. 168, 269, 296.

The picture of the mother was taken two years later.

P. 172, Cross-Q. 77.

The sliding plate was used continuously by Pratt in his business as a daguerreotypist and photographer at Alexandria and Richmond, for taking small pictures, especially for lockets and the like, from 1846 to 1856. He used it also in taking pictures of the legislatures and convention at Richmond.

Rec., pp. 167, 168.

Pratt is corroborated by his wife and son. Mrs. Pratt used to assist her husband in his business, and was perfectly acquainted with use of the sliding plate holder. She was present and saw the quadruple picture of the boy taken by means of that plate holder on his fourth birthday. The boy, now grown up, was constantly in his father's gallery, and frequently saw him use the plate holder.

Rec., pp. 296, 302.

The complainants made an elaborate attempt to break down this testimony, upon the following theory :

One mode of multiplying pictures on the same plate without withdrawing the plate from the camera was by the use of overlying slides, which being successively withdrawn, exposed successive portions of the plate, and to bring these portions nearer the focus of the lens, the camera is swung laterally, or tilted vertically, presenting the plate with a slight obliquity towards the lens (Rec., p. 22). Pictures taken in this way have more or less exaggeration and want of symmetry of foreshortening, and a difference in the light and shadow, compared with pictures taken directly behind the middle of the lens.

The complainants Southworth and Wing, testify that, in their opinion, the pictures of the Pratt boy and of Mrs. Pratt, the mother, show the above mentioned peculiarities of pictures taken by swinging or tilting the camera, instead of moving the plate, and hence, infer that they must have been so taken. Black, a photographer, Seaver and Smith, daguerreotypists, and Clarke, an optician, briefly concur in this opinion.

Rec., pp. 55, 60, 79, 85.

Southworth endeavors, at great length, to support his theory by a scientific explanation, and the mass of the complainant's proof in this cause is an effort to support this hypothesis.

On the side of the defendants Dr. Morton gives a directly contrary opinion, and examines each material allegation on which the complainants found their assertion, and by uncontradicted facts or actual demonstrative experiment, shows its error, proving to the satisfaction of any fair minded reader of the testimony, not only that the appearances in the Pratt pictures, referred to by complainants' witnesses (where such appearances exist), do not support Southworth's theory as to the way in which the pictures were taken, but are inconsistent with it, and only consistent with the fact that they were taken as Mr. Pratt testifies they were.

It would be difficult, within the limits of a brief, to discuss the questions, principally relating to the laws of light, raised by this conflicting evidence. It may be said, very shortly, that Southworth fancies he finds in the pictures a "stereoscopic" effect, by which he means the standing out of a figure in relief, and a "penumbra"—by which he means the edge of the shadow surrounding the light falling from the lens, and certain minute differences in the relative distances between corresponding parts of the four pictures on the plate; all of which indicates, as he thinks, that the camera was swung, or tilted, in taking the pictures.

Dr. Mortin shows that the so-called "stereoscopic effect," so far as any is visible in the pictures, as it only relates to part of the picture, and is not uniform, must have been due to the movement of part of the person of the sitter, and could not have been due to the movement of the camera, as, if it had been due to the latter, it would have necessarily had an uniform effect; and that, as to the "penumbra," it is what it should be, if the picture was taken by moving the plate, as stated by Pratt, and that the differences in distances, so far as any exist, are due to the slight movements of the sitter in his four different positions.

See Dr. Morton's testimony, Rec., 258, 282, and
Summary, pp. 276, 277, 278.

So far as concerns the fact that the weight of numbers is against Dr. Morton, the value of this sort of evidence, being matter chiefly of scientific opinion, is measured by the force and clearness of the reasons by which it is supported and so measured Dr. Morton's testimony outweighs all the evidence on the point under consideration which the complainants have introduced.

It will be noted that as Pratt's plate-holder was moved or "slidden," like the patented device, into successive corners, and was held in the upper positions by hand, slight derangements in the position of the plate, both in its vertical and horizontal plane, were liable to occur in taking the four pictures.

The only other witness introduced by the complainants for the purpose of discrediting Pratt's statement, is a former employee, Sanxay, who was with him from 1855 to 1856, and testifies that he then used the sliding plate-holder (some three years before Southworth sold more than two or three of his plate-holders. Rec., p. 34, Cross-Q. 37), which is in direct confirmation of what Pratt had previously said; and when asked what was Mr. Pratt's reputation for veracity, said that he "was generally looked upon as a sharp, shrewd and tricky sort of man" (Rec., p. 141.) Such comment was also made in the court below upon the fact that the parties defendants in this and other suits, or their counsel, had communicated with Mr. Pratt or some of his family before calling upon them to testify, but the evidence failed to show that their testimony was ever offered before it was sought, or that there was ever any previous communication other than is usual, proper and necessary in such cases.

Minute analysis of this conflicting evidence is deemed unnecessary.

The fact of the use of the plate-holder is proved by the oaths of three witnesses, who cannot be mistaken, corroborated by the existence of the pictures and a clear fixing of dates.

These witnesses are unimpeached, for the attempt above noted, to attack Mr. Pratt, amounts to nothing and calls for no reply. These witnesses are disinterested, and unaffected by any event of this suit.

Against this the complainants ask the court to believe that all three of these witnesses, husband, wife and son, were bribed and perjured—for the case is one where the possibility of honest error on their part is excluded—on the mere opinion of certain witnesses, two of them parties to the suit, and testifying under the influence of the strongest bias; and while that opinion is directly opposed to that of the defendants' expert, which latter is supported, to say the least, by as high authority and as cogent reasons as that of the complainants.

On such a state of the evidence the existence and use of Mr. Pratt's plate-holder is proved beyond a reasonable doubt.

The presumption in favor of the patent goes back no further than the application; and when an anticipation is proved by full and explicit evidence, as the user by Pratt is proved, the burden of proof is shifted, and it lies upon the patentee to satisfy the court of his prior invention (16 O. G., 678).

Kelleher *vs.* Darling, 14 O. G., 673.

5. The defendants also proved, by the uncontradicted testimony of the witness Beckers, Piard, Stock, Bassardet, and Semmendinger, that, as early as 1853, Beckers made, and used in his business, a sliding plate-holder, substantially like the Southworth plate-holder, but without the guide *L*.

Rec. pp. 149, 154, 156. 157, 158.
See Model of this plate-holder, Defendants' Exhibit No. 6.

6. The defendants also proved the use of a similar plate-holder by one Phillip Haas, deceased, as early as 1847.

Rec. p. 174,
And see Model Defendants' Exhibit No. 8, and picture of Mrs. Haas, made with the apparatus, Exhibit No. 12, p. 175.

7. The defendants also proved that, in bringing the different portions of a plate successively into the field of the lens, it makes a material difference whether it is done by moving the lens relatively to the plate, or the plate relatively to the lens. The advantages which belong to the latter method do not belong to the former. "Where, however," says Dr. Morton, "the lens is moved, it is impossible to

" make its entire field available in more than one picture; to " obtain any two absolutely identical pictures, or to use the " lens under its most favorable conditions in more than one " picture of the series made on one plate." And he demonstrates these facts by diagrams and a series of photographic exhibits.

See Exhibits, Morton, 1 to 7.
Rec. pp. 177, 178.

The patentee confirms this evidence by stating in the reissue specification, that the method of moving the lens relatively to the plate "necessitates a change of position of the camera itself, or of the objects."

Rec. p. 19.

The result of the foregoing testimony is as follows:

First.—Southworth never had the idea of moving the lens relatively to the plate-holder before the spring of 1847, when the rough apparatus, of which Exhibit 7, &c., are fragments, was made, and this idea was never actually carried out in a working machine, until about the time he applied for his patent in 1854.

Second.—Southworth never had the idea of moving the plate by a single lateral motion, before July, 1852, when he says he made and operated a camera and plate holder of that description. The preceding camera made for him in 1846, but never fitted with a frame, was not only never so used, but did not suggest such a use to Southworth.

Third.—Southworth never had the idea of a sliding plate holder such as he embodied in his original patent, before the fall of 1854, which is correctly found, by the learned judge in the court below, as the date of that invention by Southworth.

Fourth.—Before Southworth had the idea of moving the lens relatively to the plate in 1847, it had been done by Irving in 1845.

Fifth.—Before Southworth had the idea of moving the plate by a single motion in 1852, it had been done by Irving in 1847, by Hinds in 1849, by Sinsabaugh in 1846, and Dunshee in 1849.

Sixth.—Before Southworth had the idea of a sliding plate holder in 1854, such a plate holder had been made and used from 1845 to 1856 by Pratt, and made and used by Beckers in 1852, and by Haas in 1847.

Seventh.—What was done by Southworth, prior to 1854, when he invented his peculiar sliding plate holder, was not any part of the invention of that plate holder, but mere abandoned experiments never perfected nor embodied in the original patent. What was done by Irving and others prior to 1854, is not, therefore, to be compared with a subsequently patented invention, but with certain alleged unpatented experiments of Southworth, in which the latter has no presumption in his favor.

Eighth.—Southworth could, in no event, carry back his invention of the sliding plate holder to the invention of the moving lens, even had he invented the latter, because the two devices are different in operation, kind and result. The device of moving the lens is, at least, as unlike the device of moving the plate, as is the device of tilting the camera.

The foregoing facts clearly support the conclusion that Southworth was not the first to invent, either the device of moving the lens or plate relatively to each other, or even the employment of a plate holder sliding in a larger frame, for the purpose of successively exposing different portions of the same plate without withdrawing it from the camera. All that was old, and well known at the time of his invention. He only invented the particular combination of mechanical parts for accomplishing that result, specifically described and claimed in his original patent, and to those narrow limits he must be strictly confined.

Fourth.

One or two considerations, urged by the complainants in the court below, remain to be noticed:

1. The defendants, at one time, held a license under the patent. It was after a decision had been rendered in Massachusetts, supporting the broad claim of the patent, and left the defendants no choice. It was, indeed, their duty to follow the decision of the court. Afterwards, a contrary and controlling decision was given in the defendants' own district, affirmed by a divided judgment of this court. The complainants then, instead of suing under the license, sued for infringement. No presumption arises against the defendants from these circumstances.

2. As to the prior decisions in relation to this patent:

In the case before Judge Clifford (*Wing* v. *Richardson*, 2 Clif., 449), infringement was practically admitted, the question of the validity of the reissue does not appear to have been discussed, and could not, at that time (1865) have been discussed in the clearer light which has been cast upon that subject by the later careful consideration it has received in this court, and the invention was assumed to be much broader than the present proofs, not in that case, would justify.

As to the case of *Wing* v. *Dunshee*, before Judge Shepley, no opinion was written, and it was impossible to say what was decided.

In the case of *Wing* v. *Schoonmaker* (3 Fish., 607), the only question was upon the alleged anticipations of the patent. What those were, do not appear in the opinion. Judge Nelson held the patent invalid, on the ground of anticipation. He found the date of invention, as did Judge Wheeler in the present case, to be in the fall of 1854, and upon that point, it is not believed, any different opinion could be held. His decision holding the patent invalid because anticipated was affirmed in this court by an equal division. The precise grounds of difference for this division cannot be learned from the record, but, it may well have been, that part of the court, considering that if the patent was narrowly construed it was not anticipated, may have, for that reason, thought there should be a reversal.

The patent was held invalid in the District of Michigan, in the case of *Wing* v. *Tompkins*, no opinion being reported.

In the case of *Ormsbee* v. *Wood* (3 Fish, 372), before Mr. Justice Blatchford, no evidence was taken to sustain the defenses set up in the answer (*Id.*, p. 373), and he simply followed Judge Clifford's prior decision.

There is nothing, therefore, in the prior adjudications, to influence the determination of the present appeal against the appellees.

3. The complainants, or their witnesses, speak of the Southworth invention as having gone extensively into public use. All this testimony is based upon the error of supposing Southworth to be entitled to the broad claim of *any* means of moving the plate-holder relatively to the lens—a claim broad enough to include the defendants' structures. If the invention be narrowed to the structure of Southworth's original patent, there is no proof of any general adoption or use.

Fifth.

The decree of the court below is right, and should be affirmed.

EDMUND WETMORE,
Of Counsel for Defendants.